The Chronology of India

From Manu to Mahabharata

Vedveer Arya

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In the Loving Memory of my teacher
Dr. Vijaypal Vidyavaridhi

Transliteration (ISO 15919)

अ	a	आ	ā	इ	i	ई	ī
उ	u	ऊ	ū	ऋ	r̥	ॠ	r̥̄
ए	e	ऐ	ai	ओ	o	औ	au
अं	ṁ	अः	ḥ				

क	ka	ख	kha	ग	ga	घ	gha	ङ	ṅga
च	ca	छ	cḥa	ज	ja	झ	jha	ञ	ña
ट	ṭa	ठ	ṭha	ड	ḍa	ढ	ḍha	ण	ṇa
त	ta	थ	tha	द	da	ध	dha	न	na
प	pa	फ	pha	ब	ba	भ	bha	म	ma
य	ya	र	ra	ल	la	व	va		
श	śa	ष	ṣa	स	sa	ह	ha		

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PREFACE

Indian historical tradition reckons the chronology from Svāyambhuva Manu to the Mahābhārata era in terms of the elapsed number of Manvantaras and Mahāyugas (*Chaturyugas*). It is recorded that six Manvantaras and the Dvāpara Yuga of the 28th Mahāyuga of the seventh Manvantara had elapsed during the Mahābhārata era.

Though the 5-year Yuga calendar continued to be in vogue starting from the early Vedic era to the Mahābhārata era, the duration of a Yuga and a Chaturyuga were increased from 5 years to 1200 years and from 20 years to 4800 years respectively at the end of the 28th Krita Yuga. Later, the duration of a Chaturyuga was again increased from 4800 years to 12000 years considering the differential duration of four Yugas in a ratio of 4:3:2:1.

During the pre-Mahābhārata era, ancient Indian astronomers further extended the duration of a Yuga from 1200 years to 432000 years (1200 times 360) and the duration of a Chaturyuga from 12000 years to 4320000 years (12000 times 360) with the objective of achieving accurate calandrical calculations. Unfortunately, those scholars who later updated the Purāṇas had erroneously deemed the increased calandrical duration of Chaturyugas as a given fact, and on that basis, narrated the chronological history of ancient India, resulting in, since antiquity, the loss of the true chronology from Manu to Mahabharata. The chronology of the period before the Mahabharata era remains unresolved by historians till date.

My research found that the epoch of the end of the 28th Krita Yuga of the Vaivasvata Manvantara would be the strongest basis, if it is accurately established, to retrieve that lost chronology. Lāṭadeva, a disciple of Āryabhaṭa provides verifiable astronomical details of the epoch of the Kritayugānta in his Sūrya Siddhānta. According to him, Mayāsura wrote Sūrya Siddhānta at the end of the 28th Krita Yuga when all five planets, the sun and the moon were in a perfect conjunction in Meṣa Rāśi (Aries) on Chaitra Śukla Pratipadā. I was subsequently able to determine that this rarest of conjunctions occurred

on 22nd Feb 6778 BCE, leading to the conclusive and accurate fixing of the epoch of the beginning of the 28th Tretā Yuga as 6777 BCE.

Arguably, the duration of the Tretā Yuga was only 1200 years because the duration of a Yuga was extended from 5 years to 1200 years in 6777 BCE. After the end of the 28th Tretā Yuga, the differential duration of four Yugas was introduced; therefore, the duration of the 28th Dvāpara Yuga was 2400 years. As the duration of a Yuga, before 6777 BCE, was only five years, I was able to establish the epoch of the early Vedic Yuga calendar as being around 15962 BCE. In this manner, I reconstructed and reconciled the chronology, in this book, from the time of Svāyambhuva Manu to the Mahābhārata era based on the verifiable archaeo-astronomical references found in Vedic literature, Post-Vedic literature, the Rāmāyaṇa, the Mahābhārata and the Purāṇas. I hope Indologists and historians of the world may review and evaluate my research work on the chronology without bias or prejudice.

This book would not have been possible without the erudite inputs from numerous research papers, articles and books on this very significant subject. During the writing of this book, I have, quite often, borrowed and reproduced some of the relevant content from these sources. I acknowledge my deep indebtedness to the scholarly authors of these articles and books.

I express my profound gratitude to respected K.N. Govindacharya ji for his inspirational guidance. My sincere thanks to Dr G. Satheesh Reddy, Secretary, Department of Defence R&D and Chairman, DRDO for being a constant source of great motivation. My special thanks to Sh. Raj Vedam, Sh. Ravindranath Kaul, Sh. Sudhir Nathan, Sh. Vutukur Srinivas Rao, Sh. Sandeep Sarkar and Ms. Dipti Mohil Chawla for their valuable suggestions and sustained encouragement. I also thank Sh. Sanjay Sharma, Sh. Shamit Khemka and Sh. Paritosh Agrawal for extending all support in design of cover page and publication of this book. I thank Ms. Kalyani Prashar for her efforts in editing the manuscript. I also thank Sh. Vinod Yadav for his creative contribution in the type-setting, design and printing of this book. Finally, I thank my wife Sandhya for her support, encouragement and patience during the time of writing of this book.

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The Introduction

Ancient Indian history begins with Brahma, the founder of Vedic sciences, and his son Svāyambhuva Manu, the first king of the Brahmāvarta kingdom. A few kings and kingdoms may have existed before the lifetime of Brahma but the official recordkeeping of the genealogy of Indian kings and their history commenced from Brahma and his son Manu. Traditionally, the Sūtas and the Magadhas were entrusted with the task of maintaining this multigenerational chronological genealogy of the Manu and the Puru dynasties, charting their lineages since the early Rigvedic period. Though the two communities pursued their ancestral duty with utmost dedication, it was never a feasible expectation to maintain this continuity for thousands of years, which is perhaps why there are some gaps in the chronological genealogy of various dynasties. These historical records had been formally compiled into Purāṇa-Itihāsa Saṁhitās for the first time by Veda Vyāsa's pupil Romaharṣaṇa Sūta, during the later Rigvedic period. After this, the subject of Purāṇa-Itihāsa formally became a part of Vedic education and the pupils of Romaharṣaṇa Sūta also compiled Purāṇa Saṁhitās. The tradition of periodic compilation of Bhaviṣyat Purāṇa was introduced in the post-Vedic period. Then, the same Purāṇa Saṁhitās were recompiled in Laukika Sanskrit later, and came to be known as Purāṇas.

It seems that the tradition of historical recordkeeping declined after the reign of the Ikśvāku King Agnivarṇa, the 25th descendant of Sri Rāma. Kālidāsa abruptly ended his Raghuvaṁśa Mahākāvya after the reign of Agnivarṇa, probably due to a long interregnum in genealogical continuity of the Raghu dynasty. Evidently, the Ikśvāku dynasty had declined after the

reign of Agnivarṇa. Vyāsa, of the Mahābhārata era, revived the tradition of the study of Purāṇas and recompiled them into eighteen Purāṇas. Some Upapurāṇas were also compiled after the Mahābhārata era. The Purāṇas available to us, it seems, were finally recompiled and updated around 500-100 BCE. This revived Puranic tradition survived till the Gupta period. Only Bhaviṣyat Purāṇa continued to be periodically updated after the Gupta period.

Purāṇas narrate the continuous genealogical and chronological history of ancient India, starting from the Mahābhārata war, and the coronation of King Yudhiṣṭhira, and ending at the Gupta period. All Indian traditional and literary sources unanimously indicate the date of the Mahābhārata war to be in the 32nd century BCE and epigraphic evidence of the Aihole inscription[1] conclusively establishes the date of the Mahābhārata war in 3162 BCE.

Purāṇas refer to the Saptarṣi calendar that commenced around 6777 BCE, assuming the hypothetical position of Saptarṣis (the Big Dipper) in Aśvinī Nakśatra. Accordingly, Purāṇas, Vṛddhagarga and Varāhamihira, and other ancient scriptures unambiguously mention that the Saptarśis were in Maghā Nakśatra around 3177-3077 BCE, during the reign of King Yudhiṣṭhira. A reconstructed land grant of King Janamejaya, son of Parīkśit, was found in Tirthahalli district of Karnataka, which is dated in the 89th year of the Yudhiṣṭhira era (3073-3072 BCE).[2] So, Purāṇas relate the complete genealogies of various dynasties of Magadha Empire after the Mahābhārata war. We also have sufficient epigraphic evidence starting from the reign of King Aśoka. Thus, we can factually and accurately establish the chronological history of ancient India from the Mahābhārata war (3162 BCE) to modern times, and we will discuss this in detail in the second volume of this book.

The tougher challenge is to establish the chronology of ancient India beyond the date of the Mahābhārata war. Traditionally, Purāṇas follow the timeline of Chaturyuga cycle for narrating the chronological history of ancient India – however, the timeline of Chaturyuga cycle had been revised and enlarged during the post-Vedic and the post-Rāmāyaṇa eras with an objective to achieve accurate astronomical calculations in

whole numbers, because ancient Indian astronomers preferred to work with whole numbers instead of odd fractions. Unfortunately, the original Purāṇa Saṁhitās written by Romaharṣaṇa Sūta and his pupils, the earliest versions of Purāṇas, have been lost long ago. In fact, it seems even the Rāmāyaṇa and the Mahābhārata have been recompiled during the Śātavāhana-Gupta period.

The available versions of Purāṇas, and the Rāmāyaṇa and Mahābhārata relate numerous legends of the Vedic and post-Vedic period and also provide the genealogical information of various dynasties and lineages starting from the time of Vaivasvata Manu. Since the later timeline of Manvantaras and Chaturyugas consisted of the cycles of millions of years, it has been assumed that the great rishis and kings will be reborn in the beginning of Vaivasvata Manvantara. This may be the reason why the updaters of Purāṇas give almost all genealogies starting from the time of Vaivasvata Manu though they have propounded the beginning of the chronological history of ancient India from Svāyambhuva Manu. This contradictory assumption led to some chronological inconsistencies in the narratives of various genealogies as well as certain misplaced identifications of historical personalities with identical names. One of the biggest mistakes committed by the Puranic updaters is the misidentification of Veda Vyāsa of Rigvedic era as Vyāsa of the Mahābhārata era that led to the concocted concept of twenty eight Vyāsas and the impossible theory of eight chirajīvins. The later timeline of millions of years also misled the Puranic updaters to assign 60000 years to King Sagara and 11000 years to King Rāma and suchlike. The popularity of Adbhuta Rasa in Sanskrit poetry and drama, and the poetic exaggeration of narratives, had gradually transformed the historical legends into historico-mythological legends.

These problems in the ancient Indian historiography led to the colonial notion that ancient Indians had no sense of history and lacked historical consciousness. Eminent historians, i.e. the touts of the colonialist, and Marxist Indian historiography have violently nurtured the same notion and promoted a deep-rooted hatred for ancient Indian historiography under political patronage. They have also sabotaged the

efforts of some professional historians like RC Majumdar by branding them as "Hindu" historians, committed to the "Hindu version" of history. Evidently, most of our eminent historians have knowingly or unknowingly promoted a political ideology in academics rather than a professional research in the field of ancient Indian historiography. Over the last 200 years, the traditionalist but professional historians have continuously contributed a lot to rebut the false methodology of the colonialist and Marxist Indian historiography. Though they could not conclusively establish the authenticity of the factual tradition of ancient Indian historiography due to the chronological problems, they successfully exposed the numerous fallacies of the colonialist and Marxist Indian historiography. The unprecedented continuous resistance of the traditionalist historians has now forced eminent historians to rethink the colonialist and Marxist historiography. Gradually, they have started accepting that ancient India drew its sense of history from various sources including religious texts. Romila Thapar, a living legend of the colonialist and Marxist historiography, has recently published a book titled *"The Past Before Us: Historical Traditions of Early North India"* in which she clearly indicates a change in the mindset of the eminent historians. The Harvard University Press writes about her book:[3]

"The claim, often made, that India—uniquely among civilizations—lacks historical writing distracts us from a more pertinent question, according to Romila Thapar: how to recognize the historical sense of societies whose past is recorded in ways very different from European conventions. In The Past Before Us, a distinguished scholar of ancient India guides us through a panoramic survey of the historical traditions of North India. Thapar reveals a deep and sophisticated consciousness of history embedded in the diverse body of classical Indian literature. The history recorded in such texts as the Rāmāyaṇa and the Mahābhārata is less concerned with authenticating persons and events than with presenting a picture of traditions striving to retain legitimacy and continuity amid social change. Spanning an epoch of nearly twenty-five hundred years, from 1000 BCE to 1400 CE, Thapar delineates three distinct historical traditions: an Itihasa-Purāṇa tradition of Brahman authors; a tradition composed mainly by Buddhist and Jain scholars; and a popular bardic tradition. The Vedic corpus, the epics, the

Buddhist canon and monastic chronicles, inscriptions, regional accounts, and royal biographies and dramas are all scrutinized afresh—not as sources to be mined for factual data but as genres that disclose how Indians of ancient times represented their own past to themselves."

Though the mischievous subtitle "Historical Traditions of Early North India" is based on the colonialist divisive agenda to propagate the false theory that the history of early North India is somewhat different from that of early South India, and also to gain ideological dividends for Romila Thapar's political patrons, I am glad that the eminent historian has finally understood the deep and sophisticated historical consciousness embedded in ancient Indian literature.

Ancient Indian historical traditions are recorded in the Vedic corpus, Itihāsa texts (the epics), Purāṇas, Buddhist and Jain sources, Sanskrit and Prakrit poetic literature, regional accounts, inscriptions, Vaṁśāvalīs, monastic chronicles, traditional legends and more. Since the subject of this book is limited to the chronological history from the time of Manu to the Mahābhārata era, we need to establish the chronological historical traditions found in the Vedic corpus, the Purāṇa-Itihāsa texts and the Sanskrit literature written before the Mahābhārata era. First of all, we have to arrange the chronological order of ancient Indian literature. Pāṇiṇi indicates the three distinct stages of the evolution of Sanskrit language and grammar, i.e., Cḥāndasa (Vedic) Sanskrit, Post-Vedic Sanskrit and Bhāshā (Laukika) Sanskrit. Based on this linguistic evidence, the four Vedas were the earliest texts. Saṁhitās, Brāhmaṇas, Upaniṣads, Āraṇyakas, Sūtra and other texts were written in the Post-Vedic Sanskrit after the compilation of Vedas. Thereafter, Laukika Sanskrit texts like Nāṭyaśāstra, Smṛtis and Vālmīki Rāmāyaṇa were written. The traditional evidence also supports this chronological order of ancient Sanskrit literature.

As already explained, the historical traditions beyond the Mahābhārata era have numerous chronological problems due to the enlarged Yuga cycles, mistaken and misplaced identification of historical persons with identical names and historico-mythological narratives. Therefore, we have to follow a scientific methodology to mine the factual historical data from Vedic and post-Vedic literary sources so that certain

sheet anchors of the chronology can be firmly established. The internal archaeo-astronomical data of ancient Indian literature is the most credible evidence to unravel the sheet anchors of the chronology of ancient India.

All ancient Indian chronological traditions follow the timeline of Yuga cycles. They unanimously relate that the present Yuga is the Kaliyuga of the 28th Chaturyuga of Vaivasvata Manvantara that commenced during the Mahābhārata era; however, there is a divergence of opinion about the exact epoch of the Kaliyuga. According to the Mahābhārata, the epoch of Kaliyuga commenced before the Mahābhārata war (3162 BCE). Most probably, the Mahābhārata indicates the commencement of Kaliyuga on 9th Jan 3176 BCE and Māgha Śukla Pratipadā, when the Saptarṣis were at Maghā Nakśatra. Āryabhaṭa indicates the commencement of the Kaliyuga at midnight on 5th Mar 3173 BCE, Chaitra Śukla Pratipadā in the 1st year of the 60-year cycle, i.e., Prabhava Saṁvatsara, when Jupiter was in Aries. The Bhāgavata tradition mentions that the Kaliyuga commenced after the death of Sri Krishna in the 36th year from the date of the Mahābhārata war whereas Lāṭadeva's Sūrya Siddhānta indicates the commencement of Kaliyuga from 17th Feb 3101 BCE when all five planets, sun and moon were in close conjunction in Mīna Rāśi (Pisces). Thus, the epoch of Kaliyuga can only be conclusively established in the 32nd century BCE, between 9th Jan 3176 BCE and 17th Feb 3101 BCE.

Interestingly, Lāṭadeva's Sūrya Siddhānta says that Maya the great Asura wrote Sūrya Siddhānta at the end of the Krita Yuga of the 28th Chaturyuga of Vaivasvata Manvantara, when all five planets, sun and moon were in close conjunction in Meṣa Rāśi (Aries).[4] This great conjunction took place on 22nd Feb 6778 BCE and Chaitra Śukla Pratipadā.

It seems Mayāsura considered this conjunction in Aries as an astronomical epoch and authored his Sūrya Siddhānta in 6778 BCE at the end of the 28th Krita Yuga of Vaivasvata Manvantara. This astronomical evidence of the conjunction of all planets in Meṣa Rāśi conclusively establishes the epoch of the end of the 28th Krita Yuga around 6778-6777 BCE. Thus, the beginning of the 28th Tretā Yuga can be conclusively established on 3rd Dec 6777 BCE, Māgha Śukla Pratipadā, based on the Māgha Śuklādi calendar of Vedāṅga Jyotiṣa. Brahma Siddhānta introduced the 12-year cycle and the 60-year cycle from 26th Feb 6773 BCE, Chaitra Śukla Pratipadā, based on the Chaitra Śuklādi calendar.

The study of the entire Vedic corpus reveals that ancient Indians of Vedic and post-Vedic period followed only 5-year Yuga cycle and 20-year Chaturyuga cycle. There is no reference of the timeline of Manvantara cycle in Vedic corpus. The Jovian cycle of 12-year and 60-year cycle came into practice at the end of the 28th Krita Yuga in 6778 BCE. So, ancient Indians followed only the 5-year Yuga cycle before the beginning of the 28th Tretā Yuga in 6777 BCE. Ancient Indian chronological traditions indicate that a total of 1837 Yugas or 9185 years (1837 x 5) had elapsed before the epoch of the 28th Tretā Yuga (6777 BCE). Therefore, we can roughly establish the epoch of the Ādiyuga, or the first 5-year Yuga cycle of early Rigvedic period, in 15962 BCE. Hence, ancient India followed a continuous chronological tradition that commenced around 15962 BCE.

It may be difficult to say when humans settled down for the first time in the Indian peninsula but the catastrophic eruption of Toba Volcano of Sumatra, Indonesia had completely wiped out the humanity, flora and fauna of India 75000 years ago. Toba's erupted mass deposited an ash layer of about 15 centimetres (5.9 in) thick over the whole of India. Archaeological site of Jwalapuram in Kurnool district of Andhra Pradesh has evidence of human habitation before and after the event of Toba eruption. This Toba super-eruption was the largest explosive volcanic event of the past two million years.

Possibly, only a few people living in the hills of Kashmir and Hindu-Kush range might have survived. Gradually, North-western and North India became habitable. Thus, Sapta-Sindhu region and Sarasvati River

became the cradle of Indian civilisation. The marine archaeological studies of Gulf of Cambay support the presence of human settlements in Gujarat from 29000 BCE. The history of ancient Indian agriculture dates back to at least 16000 BCE. The early North-Indian agrarian society might have developed a calendar that reckoned from the beginning of rainy season (from summer solstice).

In all probability, ancient Indians of early Vedic period had introduced the first 5-year Yuga calendar around 15962 BCE that might have reckoned from the summer solstice. The Mahābhārata states that Brahma introduced a calendar that commenced from Dhaniṣṭhā Nakśatra (*Dhaniṣṭhādistadā kālo Brahmāṇā Parikīrtitaḥ*).[5] This indicates that Brahma might have introduced the 5-year Yuga calendar when summer solstice was in Dhaniṣṭhā Nakśatra around 15000-14000 BCE. Therefore, I have roughly fixed the date of Brahma I and his son Svāyambhuva Manu around 14500 BCE. The Mahābhārata mentions that Rishi Viśvāmitra I had reset the list of Nakśatras starting from Śravaṇa Nakśatra. Evidently, the summer solstice had shifted from Dhaniṣṭhā to Śravaṇa during the lifetime of Viśvāmitra I (13500 BCE) who might have thrived 1000 years after Svāyambhuva Manu as indirectly indicated in Vālmīki Rāmāyaṇa. Rishi Vasiṣṭha, a contemporary of Viśvāmitra I, indicates the position of the autumnal equinox at Aśvinī Nakśatra in his hymns of Rigveda. The autumnal equinox was at Aśvinī Nakśatra around 13500 BCE. So it seems Vasiṣṭha introduced the beginning of Saṁvatsara from the Śarad season, i.e. the autumnal equinox instead of the summer solstice.

Mārkandeya Purāṇa's references to Revatī Nakśatra during the time of Raivata Manu probably indicate the position of the autumnal equinox at Revatī Nakśatra around 12500 BCE. Taittirīya Brāhmāna indicates that Devas and Asuras were in conflict for many generations and Devas won over Asuras when Abhijit Nakśatra was above Uttarāṣāḍhā Nakśatra. Taittirīya Brāhmāna also mentions that Abhijit was named so because Devas decisively achieved victory over Asuras in Abhijit Nakśatra. Most probably, Devas and Asuras were in this multigenerational conflict when Abhijit was the northern pole star around 13500-11000 BCE. Around 10000 BCE, the star "Kaśyapa" of Śiśumāra constellation (Draco) replaced

Abhijit as the northern pole star. Taittirīya Āraṇyaka gives the complete description of Śiśumāra constellation which clearly indicates the star "Kaśyapa" to be Gamma Draconis. Gamma Draconis was the northern pole star around 10500-8500 BCE. Bhīṣma Parva of the Mahābhārata refers to an ancient astronomical observation that Arundhatī (star Alcor) walked ahead of her husband Vasiṣṭha (star Mizar). This Arundhatī-Vasiṣṭha observation clearly indicates that ancient Indians might have observed this event around 11000-10000 BCE because Arundhatī used to walk behind Vasiṣṭha before 11000 BCE.

Numerous references of post-Vedic literature mention the shifting of winter solstice from Mṛgaśirā Nakśatra to Rohiṇī. The Vedic legend of Prajāpati Dakśa and his 27 daughters clearly indicates the Mṛgaśirādi list of 28 Nakśatras, in turn indicating the beginning of Vaivasvata Manvantara around 11200 BCE. The winter solstice was at Mṛgaśirā Nakśatra around 11200-10200 BCE and at Rohiṇī Nakśatra around 10200-9200 BCE. The same was at Kṛttikā Nakśatra around 9200-8200 BCE. The Nakśatra Sū̠kta of Atharvaveda was recompiled around 9200-9000 BCE and the list of Nakśatras had been reset starting from Kṛttikā Nakśatra. Most of the Saṁhitās, Brāhmānas and Āraṇyakas were finally compiled when the winter solstice was at Kṛttikā Nakśatra. Vedāṅga Jyotiṣa and Maitrāyaṇī Upaniṣad were written around 8500-8000 BCE when the vernal equinox was at Āśleṣā Nakśatra and the autumnal equinox was at Śraviṣṭhā Nakśatra. The list of Nakśatras was again reset starting from Aśvinī Nakśatra when winter solstice had shifted to Aśvinī Nakśatra around 7200 BCE. Purāṇas mention that the northern pole star was located in the tail of the Śiśumāra constellation. The star Thuban or Alpha Draconis of Śiśumāra constellation was the northern pole star around 3900-1800 BCE. Based on scientific analysis of the archaeo-astronomical data, I have arrived at the following chronology of ancient India from the time of Svāyambhuva Manu to the Mahābhārata era:

- Toba Supervolcanic Eruption (~72000 BCE)
- Early Agriculture in India (~16000 BCE)
- Proto-Vedic Period (16000-14500 BCE)

- Vedic Period (14500-10500 BCE)
  - Ādiyuga : The era of early Manu dynasty (14500-14000 BCE)
  - Devayuga: The Vedic Period (14000-11000 BCE)
  - The Great Flood in Vaivasvata Manu's Kingdom (11200 BCE)
  - Vedic Sarasvati River lost in Thar Desert (10950 BCE)
  - Later Rigvedic Period (11500-10500 BCE)
  - Post-Vedic Sarasvati River started flowing westwards (10950-10000 BCE)
- The Post-Vedic Period (10500-6777 BCE)
  - The submergence of the city of Dvāravatī (9400-9300 BCE)
  - The recompilation of Avestā, i.e., Asuraveda (7000 BCE)
  - The epoch of the end of the 28th Krita Yuga (6778-6777 BCE)
- The 28th Tretā Yuga (6777-5577 BCE)
  - The Rāmāyaṇa era (5677-5577 BCE)
  - The birth date of Sri Rāma (3rd Feb 5674 BCE)
- The 28th Dvāpara Yuga (5577-3176 BCE)
  - The epoch of Yudhiṣṭhira's Rājasūya and his coronation in Indraprastha (3188 BCE)
  - The epoch of the Mahābhārata war and Yudhiṣṭhira era (3162 BCE)
- The Epoch of the 28th Kaliyuga (3176 BCE) [The Mahābhārata]
  - The epoch of the 28th Kaliyuga (3173-3172 BCE)[Āryabhaṭa]
  - The epoch of the 28th Kaliyuga (3101 BCE) [Lāṭadeva's Sūrya Siddhānta]
  - The submergence of Dwārakā city of the Mahābhārata era in a tsunami (3126 BCE)
  - The disappearance of Post-Vedic Sarasvati and Dṛṣadvati Rivers (3000 BCE)

The internal archaeo-astronomical data of ancient Indian literature clearly indicates that India has the continuous chronological history of more than 16500 years starting from the time of Brahma and his son Svāyambhuva Manu (14500 BCE).

The timelines of ancient Indian history as explained above may appear to be unbelievable or mythical to the current generation of historians because they have only learnt the Christian chronology of the world. The western 'secularist' historians (faithful Christians) of the 18th and 19th centuries CE blindly believed that the history after Christ is more factual and the history before Christ is more mythical. Isaac Newton was the first secular Christian historian who distorted the traditional chronology of various ancient nations in his book "The Chronology of Ancient Kingdoms" published in 1728 CE. Western historians have since religiously followed the same distorted chronology. They have not only believed the historicity of the epoch of the Christian era but also successfully distorted the chronology of world history considering the epoch of Christian era as the sheet anchor. Therefore, these historians have repeatedly and miserably failed to solve numerous chronological inconsistencies in world history and been forced to adopt the false methodology of selective acceptance and selective rejection of the factual data. They have also deliberately demonized the traditional chronological data so that they can easily get rid of the inconvenient factual data. Consequently, there is hardly any history of the world beyond 2000 BCE in modern textbooks though the traditional historical traditions give the genealogical and the chronological history for several thousand years before 2000 BCE.

According to ancient Greece sources, Evenor was the original inhabitant of Atlantis, the island that was located about fifty stadia from sea in front of the Pillars of Hercules (close to the Strait of Gibraltar). Cleito was the daughter of Evenor. She had a son named Atlas from the Greek god Poseidon. Atlas became the first king of Atlantis. Poseidon was the contemporary of Athena, the goddess of the city of Athens. Athena defeated Poseidon. The city of Atlantis was submerged in sea around 10200 BCE as recorded by Plato – this indicates that Evenor, Poseidon, Athena and Atlas flourished many centuries before 10200 BCE. The traditional sources of Egypt put the date of the first king Menes around 5867 BCE as calculated by Jeans Francois Champollion. Prior to 5867 BCE, a different class of demigods reigned for 5813 years: Demigods from Horos to Zeus reigned for 5212 years (or 856 years) and seven gods reigned for 13900

years (or 11985 years). If we ignore the overestimation of the reign of gods and demigods, the chronology of Egypt might have commenced around 13000-11000 BCE. The Sumerian kings list indicates that eight or eleven kings of the Antediluvian Era and more than 135 kings of the Postdiluvian Era reigned before the reign of the first dynasty of Babylon (2720-2421 BCE). Assyrian sources also record the history of many Antediluvian and Postdiluvian kings. According to ancient Greek and Persian sources, Zoroaster I flourished around 7200 BCE and Zoroaster II lived around 1310-1230 BCE. Zoroastrian and Persian sources relate that Ahur Mazda's son Gayomart and his dynasty reigned for 3070 years and many kings reigned before the time of Zoroaster I (7200 BCE). Thus, Zoroastrian sources also give the history beyond 11000 BCE.

Interestingly, ancient Tamil Sangam sources refer to the date of Rishi Agastya and the first Sangam around 11226 BCE, which perfectly reconciles with the archaeo-astronomical dating of Vedic and post-Vedic literature. The ancient history of Indonesia (Java and Bali) is clearly linked with the chronology of ancient India, too. According to Javanese sources, Śiva, Brahma and Vishnu made the island of Java habitable for human beings. Dānavas were the earliest rulers of Java. Prince Aji Śaka came from Jambūdvīpa (India) and defeated the Dānava King Dewatacengkar. He became the first king of Java. Aji Śaka's son Jaka Linglung was a Nāga. Seemingly, Aji Śaka, a prince of Naga lineage, migrated to Java from east Bengal (Bangladesh) or the Manipur-Nagaland region of India during the post-Vedic period.

Besides the ancient literary sources of the world, the archaeological evidence also indicates the timeline of several thousand years before 2500 BCE. The history of ancient Indian agriculture dates back to at least 16000 BCE. The archaeological findings of early agriculture on the banks of Lahuradewa Lake in eastern UP have been carbon dated from 13000 BCE to 7300 BCE. Evidence of the early cultivation of barley and oats has been found from 15500 BCE in southern Sri Lanka. According to some scientific studies, Indian subcontinent had experienced a semi-arid climate around 22000-16500 BCE and the climate gradually became favourable for agriculture after 16500 BCE. In all probability, ancient

Indians had struggled for survival and mastered agriculture and cattle herding during the period of a semi-arid climate around 22000-16500 BCE. They might have also evolved a basic seasonal calendar (from Varṣā Ritu (summer solstice) to Varṣā Ritu) for the purpose of agriculture. Thus, agriculture and astronomy had been evolved to an advanced stage around 16000 BCE. Ancient Indians invented a basic lunisolar calendar of 5-year Yuga cycle around 15962 BCE, which became an epochal date for the beginning of the early Vedic era. So, the multigenerational recordkeeping of the elapsed 5-year Yugas arguably commenced at least four thousand years before Holocene or Meltwater Pulse 1A (12500-11500 BCE).

The strong evidence from the sunken city of Kuśasthalī and Dvāravatī in the Gulf of Khambat supports the presence of human settlements from at least 29000 BCE. The ancient Indians of the Gujarat coastline were making pottery and initially drying it in the sun but succeeded in making fired pottery from about 18000 BCE. This sunken ancient city was built before 11000 BCE and probably submerged into sea around 9400-9300 BCE – at the end of Meltwater Pulse 1B (10200-9400 BCE). A piece of carbonized wooden sample has been dated around 7500 BCE. The archaeological site of Bhirrana in Hisar, Haryana has also been dated around 7500 BCE. A submerged structure of the ancient Poompuhar city found close to Kaveripattinam, Tamil Nadu has been dated around 9500 BCE.

The Jomon pottery of ancient Japan is the oldest pottery in the world. Recently found 46 fragments of Jomon pottery have been dated as early as 14500 BCE. The liner relief pottery found in Fukui cave Layer III is dated around 13850-12250 BCE and the same found at Torihama Shell mound has been dated around 12000-11000 BCE. Incipient Jomon pottery has been found in more than 80 archaeological sites. The chronology of Jomon culture of ancient Japan has been divided into six periods: Incipient Jomon (10500-8000 BCE), Earliest Jomon (8000-5000 BCE), Early Jomon (5000-2500 BCE), Middle Jomon (2500-1500 BCE), Late Jomon (1500-1000 BCE) and Final Jomon (1000-300 BCE).

Human settlements have continuously existed at Tell es-Sultan, near Jericho, north of Dead Sea since 12500 BCE. Recently, evidence of bread

being baked around 12500 BCE in a stone fireplace close to the same archaeological site has been found. Interestingly, this site also has the evidence of seismic shaking event around 11000 BCE. The archaeological findings at Gobekle Tepe and Nevali Cori in South-eastern Turkey have been dated around 12000-8000 BCE. Dr. BG Siddhartha, the Director of the BM Birla Science Centre, Hyderabad has studied these archaeological sites of Turkey and pointed out that the early Vedic civilization extended up to Anatolia.[6] Among the many artefacts that were unearthed in Gobekle Tepe, there is, amazingly, the head of a Vedic priest, complete with the Śikhā. There are also several pillars and structures embellished with all the astronomical motifs that clearly indicate the early settlement of Asuras who had migrated from India during the Vedic period.

Robert Bauval and Graham Hancock have dated the Great Sphinx of Giza, Egypt around 10500 BCE based on Orion correlation theory. Graham Hancock explains: "We have demonstrated with a substantial body of evidence that the pattern of stars that is "frozen" on the ground at Giza in the form of the three pyramids and the Sphinx represents the disposition of the constellations of Orion and Leo as they looked at the moment of sunrise on the spring equinox during the astronomical "Age of Leo" (i.e., the epoch in which the Sun was "housed" by Leo on the spring equinox.) Like all precessional ages this was a 2,160-year period. It is generally calculated to have fallen between the Gregorian calendar dates of 10,970 and 8810 BC." Based on the studies of water erosion marks on the Great Sphinx, Robert M Schoch opined that the Sphinx's construction must date to the 6th or 5th millennium BCE.

The Yellow River and Yangtze civilisations of ancient China have flourished from 9500 BCE to 3300 BCE before the reign of Huangdi (Yellow Emperor), the first king of China. Chinese millet agriculture also dates to around 7000 BCE. The Tartaria tablets found in Romania date to the period 5500-5300 BCE; the Cucuteni-Trypilla culture of Romania and Ukraine flourished around 5200-3500 BCE; and the pottery of the Danubian culture is also dated at 5500 BCE. A burial site of Varna Necropolis of Bulgaria has been carbon dated around 4569-4340 BCE. The Vinca culture of Serbia is dated at the period 5700-4500 BCE. The Las

Vegas culture of Mesoamerica dates back to 9000 BCE. The agriculture of squash in Ecuador is dates to around 8000 BCE. Andean civilisations also date back to 4700 BCE (Jonathan Haas found the oldest sample in Peru that has been carbon dated to 9210 BCE).

All this archaeological evidence indicates that agriculture-based human societies were thriving across the world at least from 8000-7000 BCE. The regions of South Asia, Central Asia, West Asia, Asia Minor, Egypt, Greece and the lost island of Atlantis were comparably more advanced and had the cities and the kingdoms since Holocene. The sunken city of Kuśasthalī and Dvāravatī found in the Gulf of Khambat is irrefutable evidence that cities and kingdoms existed in ancient India at least from 11000 BCE. The archaeological data collected from the sunken city of Dvāravatī and excavated sites of Bhirrana, Mehargarh, Kālibangā, Rākhigarhi, Dholavira, Harappa and Mohenjo Daro of the Sindhu-Sarasvati region, and the remains of chariots found at Sanauli village in Uttar Pradesh, unambiguously indicate a flourishing and continuous ancient Indian urban civilisation since several thousand years before 2000 BCE. Though the archaeological findings explicitly establish the continuity of ancient Indian civilisation, these findings are too little to be chronologically reconciled with the literary evidence. Moreover, the ancient Indian script (the so-called Indus script) is yet to be deciphered. Therefore, I have focused my research in analysing the archaeo-astronomical data and the traditional chronological data found in ancient Indian literature.

Wherever it suits them, colonial historians have followed Puranic genealogical data to falsify historical legends and then sometimes followed the historical legends to falsify genealogical data, which may not be the best scientific methodology. I insist that first of all, we have to establish the chronological order of ancient Indian literature. Considering the linguistic evidence of the evolution of Sanskrit and its grammar, Vedas, Saṁhitās, Brāhmānas, Āraṇyakas, Upaniṣads and the Sūtra texts are arguably more ancient than the Purāṇas and Itihāsa texts. Therefore, the historical data available in Vedic corpus is more authentic than that of Purāṇas. The historical legends are also more authentic than the

genealogical chronology assumed in Purāṇas because the legends were traditionally passed on to the next generation whereas the genealogical data has been recompiled considering the epoch of Vaivasvata Manu even though six Manus flourished before Vaivasvata Manu. Some of the legends have been mixed up due to the identical names of the historical personalities. Therefore, I have followed the historical data of Vedic corpus to correct the chronology of the historical legends and the genealogical account. If the relevant historical data is not available in Vedic corpus then I have followed the legends to correct the chronology of the genealogical account. Thus, I have attempted to establish the timelines of ancient Indian chronological history from the time of Svāyambhuva Manu to the Mahābhārata era in the upcoming chapters.

2

The Age of Manu Dynasty : From Svāyambhuva Manu to Vaivasvata Manu (14500-11200 BCE)

Svāyambhuva Manu, the son of Brahma I, was the earliest king of ancient India and the progenitor of the Manu dynasty. Now, there were many kings with the name Manu and hence Purāṇas refer to King Manu I as Svāyambhuva Manu to differentiate him from the other Manus. Interestingly, the tradition of multigenerational recordkeeping of astronomical observations had also commenced almost at the same time. It seems Brahma I, the earliest Indian astronomer, had evolved the first astronomical Siddhānta and introduced the Māgha Śuklādi lunisolar calendar of the 5-year Yuga cycle. This Siddhānta came to be known as Paitāmaha Siddhānta (a principle taught by the grandfather) because many generations of astronomers had contributed to the evolution of the Paitāmaha Siddhānta. Rigveda clearly indicates that agriculture and animal husbandry were the main occupations of the early Rigvedic society. The society of the time of Brahma I had already learnt the basics of agronomy. The Vedic astronomers of the Sapta-Sindhu region had discovered the close link between the date of summer solstice and the beginning of the rainy season. Thus, Vedic astronomers had gradually evolved a way to reconcile the solar and lunar years, and introduced a basic lunisolar calendar of the 5-year Yuga cycle.

Vedic and post-Vedic literature has numerous references to historical as well as contemporary astronomical observations. The traditional and Puranic literary sources give the chronology of ancient India (from King Svāyambhuva Manu to the Mahābhārata era) in the timelines of Yugas,

Mahāyugas or Chaturyugas and Manvantaras. Though the archaeological sites of the Sapta-Sindhu region clearly indicate the existence of Vedic civilisation at least since 11000 BCE (the sunken city of Dvāravatī in the Gulf of Khambat), the genealogical and chronological history of Vedic and post-Vedic era cannot be established based on the available archaeological evidence. In this scenario, the archaeo-astronomical study of the verifiable astronomical data found in Vedic and post-Vedic literature is the only scientific method to establish the probable dates of Vedic and post-Vedic rishis and kings. We can also validate some of these dates based on the oceanographic studies of sea level rise and the dating of the palaeochannels of Sarasvati, Sutlej, Yamuna and Driṣadvatī Rivers. Let us first critically analyse the factual astronomical data carefully collected from ancient Indian literature, with an objective to establish the probable chronology of Vedic and post-Vedic period.

The Evolution of the Concept of Yuga in Traditional Chronology

It is pertinent to understand the evolution of the concept of the Yuga cycle from the Rigvedic era to the Mahābhārata era to arrive at the traditional chronology of ancient India. The literary evidence clearly indicates that only the 5-year Yuga cycle was in vogue during the Rigvedic era. Vedic astronomers, from the Rigvedic era to the era of Atharvaveda, counted years in units of 5-years, or Yuga cycles, and kept record of the number of elapsed Yugas instead of years. Atharvaveda states: "We express 100 years or 10000 years in the cycle of Yugas like two Yugas, three Yugas and four Yugas etc."[1]

शतं तेऽयुतं हायनान् द्वे युगे त्रीणि चत्वारि कृण्मः ।
इन्द्राग्नी विश्वे देवास्तेऽनु मन्यतामहृणीयमानाः ॥

While Vedic Indians kept a record of the elapsed Yugas, it became popular to use a calendric cycle of 20 years (four Yugas) during the period of Brāhmaṇas and Upaniṣads due to a modified intercalation method. These four Yugas (20-year cycles) were named as Krita, Tretā, Dvāpara and Kali as recorded in Aitareya Brāhmaṇa. Each 20-year cycle had 7309 or 7308 days. The intercalation of Ardhamāsa (half month) instead of a full month was introduced at the end of the 20-year cycle. So, the first cycle of 20 years had the Amānta scheme and commenced on Māgha

Śukla Pratipadā but the last intercalary month of the 20th year consisted of only 15 days and ended on Adhika Pauṣa Pūrṇimā. The second cycle of 20 years had the Pūrṇimānta scheme and commenced on Māgha Krishna Pratipadā but the last intercalary month of the 20th year consisted of only 15 days and ended on Adhika Pauṣa Amāvāsyā. Thus, the 40-year cycle had 14 intercalary months and two Ardhamāsa intercalations. However, this 40-year cycle used to accumulate an extra 7.5 days and hence a concept of Kśayamāsa (dropping of one intercalary month) might have been introduced over a cycle of 160 years (eight cycles of 20 years). This 160-year cycle had a total number of 58,441 days and the average length of the Vedic sidereal year was 365.25625 days.

It is likely that the debate on the accurate intercalation method, Kśayamāsa and Kśayatithis, led to the evolution of various schools of Vedic astronomy. Rishi Yājñavalkya of Śatapatha Brāhmaṇa indicated a cycle of 95 years (34698.5 days).[2] He described the 95-year "Agnichayana" in the 6th Kānda of Śatapatha Brāhmaṇa. Interestingly, the 95-year cycle consisted of five cycles of 19 years. Thus, the cycle of 95 years was as accurate as the so-called Metonic cycle of 19 years. In fact, the cycle of 19 years had been derived from the cycle of 95 years. Though the Yājñavalkya-cycle of 95 years was established in the post-Vedic era, it appears that the traditional reference of the four Yugas (Kṛta, Tretā, Dvāpara and Kali) continued to remain popular.

In the period between 7500 and 6800 BCE, Indian astronomers might have reviewed and corrected traditional astronomical data based on fresh astronomical observations. They had realised the importance of the Jovian cycle of 12 years and enlarged the Yuga cycle from 5 years to 1200 years (in multiples of 12) around 6800 BCE. Sūrya Siddhānta introduced the 60-year cycle in 6778 BCE (when Jupiter was in Aries) whereas a new school of Paitāmaha (Brahma) Siddhānta had also started following the Jovian cycle of 12 years and the 60-year cycle at the same time, as indicated by Āryabhaṭa. However, the traditional Paitāmaha Siddhānta continued to follow the Vedic calendar of 5-year Yugas and the intercalation method of 95 years but it realised the requirement of additional intercalary month at the end of a cycle of 2700 years to reconcile the sidereal year. Thus, the Saptarṣi cycle of 2700 years was introduced around 6777 BCE considering

the hypothetical position of Saptarṣis in Aśvinī Nakśatra. The Romaka Siddhānta differed from the Paitāmaha Siddhānta and introduced the cycle of 2850 years for corrections in the method of intercalation. Thus, the Paitāmaha Siddhānta considered the average length of sidereal year as 365.258148, whereas the Romaka Siddhānta considered it as 365.257544.

The Siddhantic Indian astronomy was formally founded around 6777 BCE. Seemingly, ancient Indian astronomers had also revised the time span of Chaturyugas from 20 years to 4800 years and established a Yuga cycle of 1200 years (one hundred Jovian years), as also the concept of Manvantara around 6777 BCE. Later, the Yuga cycle of 1200 years was enlarged from 1200 years to 12000 years around 5500-5000 BCE. This Mahāyuga cycle of 12000 years was divided into four Yuga cycles (Kṛta, Tretā, Dvāpara and Kali) in a ratio of 4:3:2:1. Gradually, around 4000 BCE, the time span of a Yuga increased from 1200 years to 432000 years (1200 x 360) and that of a Mahāyuga cycle increased from 12000 years to 4320000 years (12000 x 360), with an objective to facilitate the calendric and astronomical calculations in whole numbers.

Ancient Indian astronomers had considered the year 6777 BCE as the epoch of Kritayugānta (the end of Kṛta Yuga) and the beginning of Tretā Yuga of the 28th Chaturyuga of Vaivasvata Manvantara. Both ancient astronomers and historians seem to have had the traditional information that total 1837 Yugas of 5 years had elapsed from the epoch of Ādiyuga to 6777 BCE. They might have divided the elapsed 1837 Yugas into Mahāyugas or Chaturyugas and Manvantaras as details given below:

	Manvantaras		**Elapsed Yugas**
1.	Svāyambhuva Manvantara	72 x 4	288
2.	Swārochiṣa Manvantara	72 x 4	288
3.	Uttama Manvantara	72 x 4	288
4.	Tāmasa Manvantara	72 x 4	288
5.	Raivata Manvantara	72 x 4	288
6.	Chākśuṣa Manvantara	72 x 4	288
7.	Vaivasvata Manvantara	(27 x 4) + 1	109
			1837

Thus, ancient Indian astronomers and historians assumed that the Kṛta Yuga of the 28th Chaturyuga of Vaivasvata Manvantara ended, and the 28th Tretā Yuga commenced in 6777 BCE. It appears that there was a divergence of opinion on the ratio of the time span of Yugas in a Chaturyuga during the period 6777-3177 BCE. For instance, Āryabhaṭa had argued for an equal length of four Yugas in a Chaturyuga of 4320000 years whereas the traditional Siddhāntas of the period 5000-3200 BCE propounded the differential duration of four Yuga cycles (Kṛta, Tretā, Dvāpara and Kali) in a ratio of 4:3:2:1. However, all Siddhāntas and traditions unanimously agreed that the present Manvantara is the Vaivasvata and the present Chaturyuga is the 28th. Another significance of the epoch of 6777 BCE is that the Saptarṣi calendar (a cycle of 2700 years) and a Yuga cycle of 1200 years were also introduced from this epoch for keeping the chronological record of the elapsed years. Moreover, Lātadeva informs us that Maya the great Asura wrote Sūrya Siddhānta at the end of the 28th Kṛta Yuga and there was a conjunction of Sun, Moon and all planets in Meṣa Rāśi (Aries).[3] This conjunction took place on 22nd Feb 6778 BCE. The ecliptic longitudes of the planets on 22nd Feb 6778 BCE are: Budha (Mercury) - 265’ 49, Maṅgala (Mars) - 268’ 43, Guru (Jupiter) - 277’ 33, Sūrya (Sun) - 280’ 22, Chandra (Moon) - 281’ 32, Śani (Saturn) - 289’ 51, Śukra (Venus) - 292’ 53. The planets’ mean position should be within 13 degrees, considering Sun’s position in Meṣa Rāśi. Sun was at ecliptic longitude of 280 degrees. Venus was approximately 13 degrees away from Sun (around 266 degrees) whereas Mercury was also 13 degrees away from Sun (around 293 degrees). Rest of the planets were within 13 degrees. Thus, Mayāsura considered this rare conjunction as an astronomical epoch and authored Sūrya Siddhānta in 6778 BCE, at the end of the 28th Kṛta Yuga.

22 Feb 6778 BCE

Evidently, the epoch of 6777 BCE was assumed as the epoch of the Kritayugānta of the 28th Chaturyuga of Vaivasvata Manvantara. Thus, the beginning of the 28th Tretā Yuga can be conclusively established on 3rd Dec 6777 BCE, Māgha Śukla Pratipadā, based on the Māgha Śuklādi calendar of Vedāṅga Jyotiṣa; and on 1st Feb 6776 BCE, Chaitra Śukla Pratipadā, based on the Chaitra Śuklādi calendar.

So the astronomers of the post-Rāmāyaṇa era had introduced a Yuga of 432000 years (multiplying 1200 by 360), a Chaturyuga of 4320000 years (multiplying 12000 by 360) and a Kalpa of 4320000000 years (multiplying 4320000 by 1000) because the concepts of longer Yuga, Chaturyuga and Kalpa cycles facilitated the accurate astronomical calculations in whole numbers. These Yugas and Chaturyugas of millions of years gradually became popular and people started believing these timelines of millions of years as historical.

In reality, the Yuga of Vedic times was only five years. Rigveda says that Rishi Dīrghatamā Māmateya became old in his 10th Yuga, which indicates that Dīrghatamā became an old man when he attained the age of 49 or 50 years.[4]

दीर्घतमा मामतेयो जुजुर्वान्दशमे युगे।
अपामर्थं यतीनां ब्रह्मा भवति सारथिः॥

The entire Vedic corpus referred to the 5-year Yuga cycle and had no knowledge of the cycles of 1200 or 12000 years. Therefore, the 1837 elapsed Yugas up to the end of Kṛta Yuga of 28th Chaturyuga of the 7th Manvantara must be multiplied by five to arrive at the epoch of the first Yuga or Ādiyuga. Thus, a total of 9185 years had elapsed up to 6777 BCE and the first cycle of the 5-year Yuga had probably commenced in 15962 BCE.

The Epoch of Ādiyuga (15962 BCE)

As explained above, the traditional chronology of Yugas indicates that the epoch of "Ādiyuga", or the first cycle of five years, might have commenced around 15962 BCE. The internal astronomical evidence also validates the epoch of 15962 BCE. Vedāṅga Jyotiṣa of post-Vedic period mentions that the Ādiyuga commenced when Sun, Moon and Vāsava were in conjunction at the beginning of Śraviṣṭhā Nakśatra.[5]

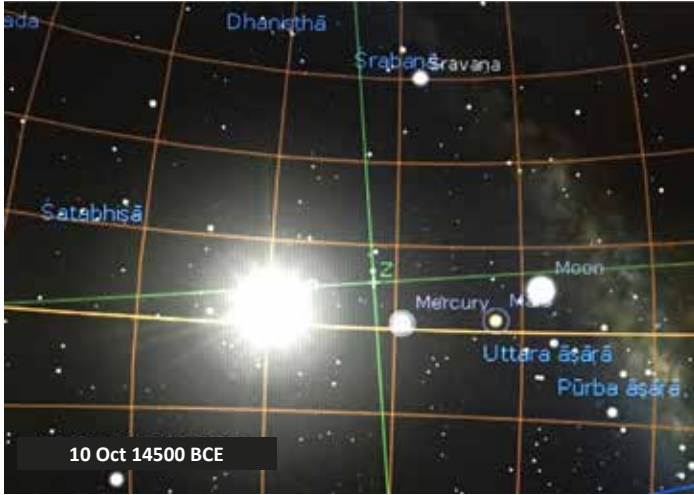
While explaining the word "Savāsavau", Somākara the ancient commentator refers to the conjunction of Sun, Moon and Jupiter at the beginning of Śraviṣṭhā Nakśatra (*tathā ca tatra yadi Brihaspatirāste*). Here, the word '*Savāsavau*' must be interpreted as "with Brihaspati". Modern scholars have completely ignored the traditional interpretation of Somākara. The available text of Vedāṅga Jyotiṣa was written by Śuchi based on Lagadha Muni's treatise—since the importance of the Jovian cycle had already been established before the lifetime of Śuchi, evidently, he had speculated an additional condition of '*Savāsavau*', though no such indication is found in Vedic corpus.

The First Saṁvatsara Commenced from Summer Solstice

The internal evidence of the old hymns of Rigveda clearly establishes that the New Year used to commence on summer solstice in the proto-Vedic and early Vedic eras. Rishi Vasiṣṭha Maitrāvaruṇi's Parjanya Sūkta unambiguously indicates that the commencement of rainy season and the summer solstice marked the beginning of Saṁvatsara, or New Year.[6]

Moreover, the Sanskrit word "Varṣa" (used for a Solar year) is derived from the word "Varṣā" (rainy season). It is evident that Varṣa or New Year commenced from rainy season during the early Rigvedic period. Logically, the earliest agrarian society of North India would naturally prefer to fix the beginning of New Year from rainy season, i.e., summer solstice. It appears that the first five-year cycle of Vedic calendar followed a lunisolar cycle that commenced from summer solstice.

The Date of Brahma I, the Founder of Vedic Sciences (14500-14460 BCE)

Brahma I was the first rishi and the founder of the knowledge-based Vedic society. He was the earliest known Vedic astronomer who might have introduced the concept of 28 Nakśatras and seven Rāśis. Each Rāśi had four Nakśatras. He also established the Paitāmaha Siddhānta and propounded that the Saṁvatsara must commence from Māgha Śukla Pratipadā in Dhaniṣṭhā Nakśatra. Summer solstice used to occur in Dhaniṣṭhā Nakśatra around 15000-14000 BCE. Since Brahma I introduced the Dhaniṣṭhādi list of Nakśatras, the first Rāśi of four Nakśatras might have consisted of Dhaniṣṭhā, Śravaṇa, Abhijit and Uttarāṣāḍhā Nakśatras.

From above, we can roughly fix the lifetime of Brahma I around 14500 BCE considering the occurrence of summer solstice at Dhaniṣṭhā Nakśatra. At the same time, the early Vedic period had formally commenced. The period of 16000-14500 BCE can be referred to as proto-Vedic period because Vedic history before Brahma I had not been recorded. Brahma I had many sons. Some of them followed the path of knowledge and came to be known as Brāhmaṇas. Gradually, all rishis came to be collectively known as Brāhmaṇas (sons of Brahma). Svāyambhuva Manu became Kśatriya and founded the Manu dynasty in the Brahmāvarta kingdom.

King Manu I or Svāyambhuva Manu (14460-14420 BCE)

Svāyambhuva Manu was the first emperor of the early Vedic period. He married Śatarupā. He had two sons, Priyavrata and Uttānapāda, and three daughters, Ākūti, Devahūti and Prasūti. Sanskrit words "Mānava", "Manuṣya" and "Mānuṣa" have been derived from Manu. Since Manu was the first known king, the people of his kingdom came to be known as Mānavas or Manuṣyas.

The Kingdom of Brahmāvarta

The kingdom of Svāyambhuva Manu, known as Brahmāvarta, was located between Sarasvati and Driṣadvati rivers. Rigveda refers to the geography of this region.[7]

नि त्वा दधे वर आ पृथिव्या इळायास्पदे सुदिनत्वे अह्नाम्।
दृषद्वत्यां मानुष आपयायां सरस्वत्यां रेवदग्ने दिदीहि॥

Manusmriti also refers to the same region as Brahmāvarta. Gradually, Mount Sumeru became the northern border of greater Brahmāvarta.

King Uttānapāda (14420-14390 BCE)

King Uttānapāda was the younger son of Svāyambhuva Manu. Suruchi and Sunīti were the wives of Uttānapāda. Suruchi's son was Uttam and Sunīti's son was Dhruva. Uttam succeeded his father Uttānapāda but died in a war.

King Dhruva (14390-14350 BCE)

After the death of Uttam, Dhruva ascended to the throne. He was the most celebrated king of the early Rigvedic era. Deneb was the pole star during the period 16000-14000 BCE. The pole star was named after King Dhruva by early Vedic astronomers around 14300-14000 BCE. Therefore, the word "Dhruva" became synonymous with immovable in Sanskrit. Manu, Uttānapāda and Dhruva were the first emperors of India and enjoyed the support of many Prajāpatis (community leaders). There are numerous references of Dhruva in Rigveda.[8]

King Priyavrata and His Son Agnīdhra

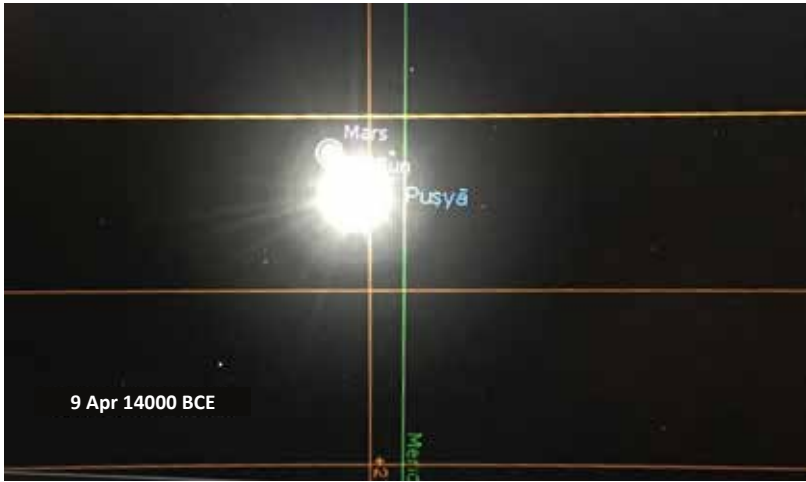
Priyavrata was the elder son of Svāyambhuva Manu. It is probable that Priyavrata reigned over North and North-western regions and Uttānapāda reigned over the central and southern regions of the Brahmāvarta kingdom. Agnīdhra succeeded his father Priyavrata. King Agnīdhra had nine sons namely Nābhi, Kimpuruṣa, Harivarṣa, Ilāvrita, Ramya, Hiraṇyavat, Kuru, Bhadrāśva and Ketumāla. Ilāvrita and Ketumāla established their kingdoms to the west of Indus River. According to Avesta, Keyumars was the first human being in the world. Seemingly, Ketumāla, known as Keyumars, was the progenitor of ancient Zoroastrians.

Early Saptarṣis: Marīchi, Atri, Aṅgiras, Bhrigu, Pulaha, Kratu, Pulastya (14500-14400 BCE)

Seven rishis – Marīchi, Atri, Aṅgiras, Bhrigu, Pulaha, Kratu and Pulastya – emerged as the great scholars and the most influential knowledge

leaders of society starting from the reign of King Manu I, Uttānapāda and Dhruva. They came to be known as Saptarṣis. They were also called as mānasa-putras of Brahma because they were the great pupils of Brahma I. This may be the reason why the Saptarṣis and their descendants were generally referred to as Brāhmanas. These Saptarṣis laid a strong foundation for evolution of various Vedic sciences. The seven stars of Big Dipper constellation were named after these seven rishis around 14300-14000 BCE.

Śraviṣṭhā or Dhaniṣṭhā Nakśatra of Rigvedic Era (15000-14000 BCE)
Post-Vedic literature clearly tells us that Śraviṣṭhā was the first Nakśatra in the list of Nakśatras during the Rigvedic era. Mahābhārata also confirms that Śraviṣṭhā was the first Nakśatra.[9] Undoubtedly, Rigvedic references to Nakśatras clearly indicate the well-established system of Nakśatras (*Nakśatra-śravasām, Nakśatrāṇām, Nakśatrebhiḥ, Nakśatraiḥ* and suchlike). Though there is no complete list of Nakśatras, Rigveda refers to some Nakśatras like Puṣya[10] or Tiṣya, Aghā (Māgha),[11] Arjunī (Phālgunī),[12] Punarvasu,[13] Aśvinī,[14] Rohiṇī[15] and Revatī.[16] While Rigveda did not mention the name of Śraviṣṭhā or Dhaniṣṭhā, the entire Vedic astronomical tradition places Dhaniṣṭhā as the first Nakśatra of Saṁvatsara.

The Date of Brihaspati I (14000 BCE)
Brihaspati I belonged to Aṅgiras rishi gotra. He was the Purohita of King Indra. Tārā was his wife. According to legends, Soma, the pupil of Brihaspati, eloped with Tārā. Seemingly, Taittirīya Brāhmaṇa indicates that the winter solstice was at Tiṣya or Puṣya Nakśatra when Brihaspati I flourished (बृहस्पतिः प्रथमं जायमानः तिष्यं नक्षत्रमभिसंबभूव).[17] Rigveda also indirectly indicates the same (बृहस्पतिः प्रथमं जायमानो महो ज्योतिषः परमे व्योमन् । सप्तास्यंस्तुविजातो रवेण वि सप्तरंश्मिरधमत्तमांसि ॥).[18] Brihaspati is also the devatā of Puṣya Nakśatra. In all probability, Brihaspati I flourished when the winter solstice was at Tiṣya Nakśatra around 14000 BCE.

The Date of Brahmarshi Viśvāmitra I (13500 BCE)

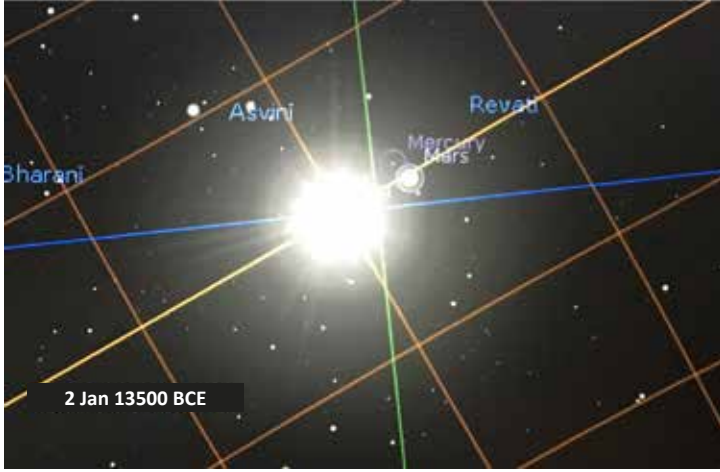
Rāmāyaṇa and Brahmānda Purāṇa inform us that Kuśa married Vaidarbhī (a princess of Vidarbha) and had four sons namely Kuśāmba, Kuśanābha, Asūrtarajasa and Vasu. Kuśāmba built the city named Kauśāmbī and Kuśanābha built the city named Mahodayapurī. Asūrtarajasa built the city called Dharmāraṇya and Vasu was the founder of the city of Girivraja.[19] Kuśanābha married Paurukutsī, daughter of King Purukutsa and Apsarā Ghritāchī. Gādhi was the son of Kuśanābha and Paurukutsī. King Gādhi founded the city of Gādhipura (Kānyakubja or Kannauj city). Viśvāmitra (Viśvaratha) was the son of Gādhi and succeeded his father in Gādhipura. Later, Viśvāmitra renounced his kingdom and became a Brahmarshi.

It is stated in the Mahābhārata that Viśvāmitra started counting the Nakśatras from Śravaṇa Nakśatra.[20] As explained earlier, Brahma I observed the precession of summer solstice from Śatabhiṣaj to Dhaniṣṭhā and formally established the scheme of Nakśatras starting from Dhaniṣṭhā around 14500 BCE. Seemingly, Viśvāmitra lived 1000 years later and observed the summer solstice at Śravaṇa Nakśatra around 13500 BCE. The Rāmāyaṇa also indirectly indicates that Viśvāmitra lived 1000 years later from the date of Brahma I.[21] Therefore, Viśvāmitra started counting the Nakśatras from Śravaṇa Nakśatra but the traditionalists continued to count Nakśatras from Dhaniṣṭhā. The introduction of the scheme of

counting the Nakśatras from Śravaṇa clearly indicates that Brahmarshi Viśvāmitra might have flourished around 13500 BCE. The summer solstice was at Śravaṇa Nakśatra around 14000-13100 BCE.

Interestingly, Rishi Viśvāmitra was the first Vedic rishi who observed the precession of equinox. Gopatha Brāhmaṇa attributes the credit of the first observation of Sampātas (precession) to Rishi Viśvāmitra (तान्वा एतान् सम्पातान् विश्वामित्रः प्रथममपश्यत्).[22]

The Date of Rishi Vasiṣṭha II (~13500 BCE)

Rishi Vasiṣṭha I was one of the earliest Saptarṣis. Vasiṣṭha II, the descendant of Rishi Vasiṣṭha gotra was the contemporary of Rishi Viśvāmitra. The Aśvinī hymns of the 7th Mandala compiled by Vasiṣṭha Maitrāvaruṇi, a later descendant of Vasiṣṭha II, indicate that the autumnal equinox was in Aśvinī Nakśatra during the lifetime of Vasiṣṭha II.[23] Legends also inform us that Vasiṣṭha was the contemporary of Viśvāmitra I. Interestingly, the summer solstice at Śravaṇa Nakśatra establishes the date of Viśvāmitra around 13500 BCE whereas the autumnal equinox at Aśvinī Nakśatra establishes the date of Vasiṣṭha around 13500 BCE.

Thus, the astronomical evidence also supports the thought that Vasiṣṭha and Viśvāmitra were contemporaries. Vasiṣṭha II was the first who discovered the importance of autumnal and vernal equinoxes in astronomical calculations.

According to Purāṇas, Aśvinī Kumāras, also known as Dasra and Nāsatya, were the sons of Sūrya and his wife Śaraṇyu. Sūrya also married Saṅjñā, or Sandhyā, daughter of Viśvakarmā I (13650 BCE). Aśvinīs were the disciples of Rishi Dadhīchi I (13650 BCE) who was the son of Rishi Atharva (13700 BCE) of Bhrigu gotra and Śānti (daughter of Rishi Kardama). Sārasvata was the son of Rishi Dadhīchi I. Most probably, Aśvinī Kumāras were the inventors of Ayurvedic medicine. They were the contemporaries of Rishi Chyavana I (13600 BCE). Seemingly, Vasiṣṭha II named twin Nakśatras of Aśvinī constellation after Aśvinī Kumāras when he observed autumnal equinox in Aśvinī Nakśatra. Thus, Aśvinīs became the deity of many hymns written by the Vasiṣṭha family.

The Chronology of Early Rigvedic Kings and Rishis

Brahma was the progenitor of Manus (Kśatriyas) and Saptarṣis (Brāhmaṇas). King Prithu, a descendant of Dhruva performed 99 Aśvamedha Yajñas. Indra I, one of the Ādityas (sons of Rishi Kaśyapa and Aditi) was the first who could perform 100 Aśvamedha Yajñas. King

Soma, a contemporary of Brihaspati I (14000 BCE) was the progenitor of Soma Vaṁśa.

The genealogy and the chronology of the Puru kings of early Rigvedic era:

	The Puru Dynasty	**In CE**
1.	Soma (a contemporary of Brihaspati I)	14000 BCE
2.	Budha	13975 BCE
3.	**Puru I**	**13950 BCE**

Puru I, the grandson of Soma was the founder of the Puru dynasty. The Purus established their kingdom in the Sapta-Sindhu region and were the patrons of Vedic Rishis. They also performed Yajñas. Rigveda refers to Agni as Purupriyā[24] and Puruhūtā.[25] Seemingly, the word "Purohita" is also derived from the word "Puru". Purukutsa I was the celebrated Puru king of the Rigvedic era. He married off his daughter Paurukutsī to Kuśanābha, the grandfather of Viśvāmitra. Trasadasyu was the son of Purukutsa. The Puru King Kuruśravaṇa, son of Trasadasyu, was the senior contemporary of Rishi Kavaṣa Ailūṣa, who eulogized him in his Sūkta.[26] Kavaṣa Ailūṣa was a junior contemporary of rishis like Vasiṣṭha II, Viśvāmitra I and Gritsamada I.

Rājarshi King Trasadasyu I (13470-13430 BCE)

Pañcaviṁśa Brāhmaṇa, Kāṭhaka Saṁhitā and Taittirīya Saṁhitā inform us that Trasadasyu I, the son of Purukutsa, performed many Vedic Yajñas.[27] It seems there were two Trasadasyus. Jaiminīya Upaniṣad Brāhmaṇa mentions that Vītahavya Śrāyasa, Kaśīvant Auśija and Para Atnāra were the contemporaries of Puru King Trasadasyu II.[28] They were the great Rigvedic kings (*Pūrve Mahārajāḥ*). Trasadasyu I Purukutsa wrote a hymn of Rigveda.[29] His reference of Saptarṣis indicates that the Saptarṣis had already attained a legendary status by the time of King Trasadasyu I. Kuruśravaṇa was the son of Trasadasyu I.

	The Puru Dynasty	**In CE**
1.	Durgaha (a descendant of King Puru I)	13550-13530 BCE
2.	Girikśit	13530-13500 BCE
3.	Purukutsa	13500-13470 BCE
4.	Trasadasyu	13470-13430BCE
5.	Kuruśravaṇa	13430-13380 BCE

King Kuruśravaṇa (13430-13380 BCE)

King Kuruśravaṇa was the son of King Trasadasyu. He was eulogized by Rishi Kavaṣa Ailūṣa in Rigveda.[30] It appears that King Trasadasyu had another name: Mitrātithi Upamaśravas.

King Marutta Āvīkśita (13550-13500 BCE)

Śatapatha Brāhmaṇa tells us that Marutta Āvīkśita was the Āyogava king. Āyogavas were the sons of Śūdra men from Vaiśya women. Manu's son Priṣadhra was degraded to Śūdra because he killed a cow. Manu's son Nediṣṭha was the progenitor of Vaiśyas. Marutta was the son of Āvīkśita and the descendant of Nediṣṭha. Samvarta Āṅgirasa, the brother of Brihaspati anointed Marutta Āvīkśita. The genealogy of Marutta Āvīkśita:

		In CE
	Nediṣṭha (son of Manu)	14000 BCE
1.	**Nābhāga**	14000-13950 BCE
2.	Bhalandana	13950-13910 BCE
3.	Vatsapri	13910-13870 BCE
4.	Prānśu	13870-13830 BCE
5.	Khanitra	13830-13790 BCE
6.	Chakśupa	13790-13750 BCE
7.	Viṁśa	13750-13710 BCE
8.	Viviṁśati	13710-13670 BCE
9.	Khaninetra	13670-13630 BCE
10.	Karandhama	13630-13590 BCE
11.	Āvīkśita	13590-13550 BCE
12.	**Marutta** Āvīkśita	13550-13500 BCE

King Duṣyanta (13480-13450 BCE)

The Puru King Duṣyanta married Śakuntalā, a daughter of Viśvāmitra (13500 BCE) and Menakā. Śakuntalā was brought up by Rishi Kaṇva of Aṅgiras gotra. Bharata was born to Śakuntalā and Duṣyanta. The genealogy of King Duṣyanta given in Bhāgavata Purāṇa:[31]

		In CE
	Puru I	**13950-13925 BCE**
1.	Janamejaya	13925-13900 BCE
2.	Prāchīnavat	13900-13870 BCE
3.	Pravīra	13870-13840 BCE
4.	Manasyu	13840-13800 BCE
5.	Chārupada	13800-13770 BCE
6.	Sudyu	13770-13740 BCE
7.	Bahugava	13740-13710 BCE
8.	Samyati	13710-13680 BCE
9.	Ahamyati	13680-13650 BCE
10.	Raudrāśva (Married to Apsarā Ghritāchi. Thus, he was a senior contemporary of Kuśanābha, the grandfather of Viśvāmitra.)	13625-13600 BCE
11.	Riteyu	13600-13580 BCE
12.	**Rantināva**	13580-13550 BCE
13.	Sumati	13550-13500 BCE
14.	Rebhi	13500-13480 BCE
15.	**Duṣyanta**	13480-13450 BCE

Rantināva had three sons, Sumati, Dhruva and Apratiratha. Pragātha Kaṇva Rishi was the son of Apratiratha and Medhātithi was the son of Kaṇva. Kāṇvāyana Brāhmaṇas were the descendants of Medhātithi. Kaṇva, the contemporary of Duṣyanta was the son of Medhātithi.

King Bharata, the Great (13450-13400 BCE)

King Bharata was the first greatest emperor of Rigvedic period. He established a vast kingdom and performed many Aśvamedha Yajñas

under the guidance of Maharshi Kaṇva (Aṅgiras Gotra). He was the progenitor of Bharata dynasty. Aitareya Brāhmaṇa mentions that Rishi Dīrghatamas Māmateya was the contemporary of King Bharata and performed the ritual of his Aindra Mahābhiṣeka.[32] King Bharata performed 78 Aśvamedha Yajñas on the banks of Yamuna River and 55 Aśvamedha Yajñas on the banks of Ganga River. Thus, Bharata performed total 133 Aśvamedha Yajñas. This was the reason why Bharata was also referred to as King Aśvamedha in Rigveda. Śatapatha Brāhmaṇa refers to King Bharata as Saudyumni, a descendant of Sudyumna.[33]

King Bhārata Āśvamedha (13400-13370 BCE)
Bhārata Āśvamedha was the son of King Bharata. He succeeded his father. He was the author of two mantras of the 27th hymn of the 5th mandala of Rigveda.

Three Rajarshis: Traivriṣṇa Tryāruṇa, Paurukutsa Trasadasyu and Bhārata Āśvamedha (13550-13370 BCE)
King Tryāruna, son of Trivriṣṇa, was the contemporary of King Trasadasyu and King Āśvamedha, son of Bharata, lived after Trasadasyu. Tryāruṇa was the father of Satyavrata Triśanku. A hymn of Rigveda contains mantras written by these three Rajarshi kings.[34]

King Suhotra (13370-13340 BCE)
Suhotra was the son of King Bhārata Āśvamedha. He had three sons, Ajamīḍha, Purumīḍha and Sumīḍha. Some historians mistakenly identified him to be Suhotra Bhāradwāja, the author of Rigvedic hymns.[35] Suhotra Bhāradwāja mentions Divodāsa, a later descendant of Bharatas, therefore Rishi Suhotra Bhāradwāja cannot be identified with King Suhotra.

King Ajamīḍha Sauhotra (13340-13300 BCE)
Ajamīḍha and Purumīḍha authored two hymns of Rigveda.[36] The 44th Sūkta of the fourth Mandala written by Ajamīḍha and Purumīḍha indicates the position of autumnal equinox at Aśvinī Nakśatra. This astronomical evidence also validates the date of Ajamīḍha and Purumīḍha. It may also be noted that the hymns of Ajamīḍha and Purumīḍha were placed in the

4th mandala of Vāmadevas and not in the 6th mandala of Bhāradwājas. Most probably, Kaṇva, Medhātithi and Kāṇvāyanas were the descendants of Bharata King Ajamīḍha.

The chronology of Early Bharatas:

	The Bharata Dynasty	**In CE**
	Duṣyanta	13480-13450 BCE
1.	**Bharata Aśvamedha**	**13450-13400 BCE**
2.	Bhārata Āśvamedha	13400-13380 BCE
3.	Suhotra	13680-13650 BCE
4.	Ajamīḍha	13340-13300 BCE
5.	Kaṇva, Medhātithi and Kāṇvāyanas	13300 BCE onwards

King Atithigva and Indrota (13450-13370 BCE)
Rishi Priyamedha Āṅgirasa refers to King Indrota, son of Atithigva, King Āśvamedha, son of King Aśvamedha (Bharata) [13400-13380 BCE] and King Ārkśya, son of King Riksha.[37] Thus, King Āśvamedha, King Indrota Atithigva and King Ārkśya were contemporaries.

The Kings of Gādhipura and Viśvāmitra (13650-13450 BCE)
King Kuśa was a descendant of the Puru dynasty. Vishnu Purāṇa tells us that Kusha had four sons called Kuśāmba, Kuśanābha, Adhūrtaraja and Vasu. According to Harivaṁśa, the names of the four sons are Kuśanābha, Kuśāmba, Kuśika and Mūrtimat. Kuśāmba established his kingdom and built the city called Kauśāmbī. Kuśanābha was ruling over the region of modern Kannauj. Kuśanābha had a son, Gādhi, and a daughter, Satyavatī. Gādhi established his empire and built the city called Gādhipura (known as Kānyakubja later). Viśvāmitra was the son of King Gādhi.

		In CE
1.	Kuśa	13650-13600 BCE
2.	Kuśanābha	13600-13550 BCE
3.	Gādhi	13550-13500 BCE
4.	Viśvāmitra I	13500-13450 BCE

King Brahmadatta (13575-13525 BCE)
Rāmāyaṇa relates that Brahmadatta was the son of Rishi Chūli and Apsarā Somadā (daughter of Urmilā). He became the king of Kāmpilya (a town near Farrukhabad, UP). King Kuśanābha had many daughters from Apsarā Ghritāchī. Kuśanābha married off his daughters to King Brahmadatta.[38] Thus, King Brahmadatta was the contemporary of Kuśanābha and his son Gādhi, the father of Viśvāmitra.

King Satyavrata Triśanku (13500-13450 BCE)
Rigveda indicates that Trivrişṇa was the king of Ayodhyā. Tryāruṇa succeeded his father Trivrişṇa. Rishi Vasiṣṭha was the priest of Tryāruṇa. Satyavrata Triśaṅku was the son of Tryāruṇa. Hariśchandra was the son of Triśaṅku.

		In CE
1.	Trivrişṇa	13550-13530 BCE
2.	Tryāruṇa	13530-13500 BCE
3.	Satyavrata Triśaṅku	13500-13450 BCE
4.	Hariśchandra	13450-13425 BCE

Ādityas, the Sons of Rishi Kaśyapa II and Aditi (14000 BCE)
Ādityas were the sons of Rishi Kaśyapa II and his wife Aditi. Rigveda mentions the names of seven Ādityas [Varuṇa, Mitra, Aryaman, Bhaga, Aṅśa, Agni and Indra I]. Vishnu, Tvaṣṭā, Pūṣan and Dhātri were also Ādityas. Vivasvān, the father of Vaivasvata Manu, was added to the list of Ādityas after 11200 BCE. Devas and Asuras were the descendants of Ādityas.

King Indra II, Vishnu II and Viśvakarmā I (13650-13600 BCE)
Rigveda referred to Indras in plural tense (*bahuvachana*) several times. Seemingly, the descendants of Indra were also called Indras and Indra was a royal title of Indras. Yakśas were the allies of Indras. The earliest Indra, son of Aditi, was the contemporary of Brihaspati I (14000 BCE). Another King Indra was the contemporary of King Śaryāti, the son of King Vītahavya. He was in conflict with Vritrāsura. Vishnu supported

Indra to eliminate Vritrāsura. Viśvakarmā I built the city of Amarāvatī of Indras.

King Vītahavya and His Son Śaryāti (13650-13600 BCE)

Vītahavya was a king but became Brāhmaṇa under the influence of Bhrigus. His son, Śaryāti, was a great king. The Mahābhārata refers to King Śaryāti as one of the greatest kings (24 kings) of the pre-Mahābhārata era.[39] Haihaya and Talajaṅgha were born in the lineage of Śaryāti. Sukanyā, daughter of King Śaryāti, married Rishi Chyavana.

Jamadagni I and His Genealogy

The ancestors of Rishi Jamadagni belonged to the lineage of Maharshi Bhrigu. Rishi Chyavana married Sukanyā, the daughter of King Śaryāti. Chyavana was the contemporary of King Kuśanābha. They had a son called Urva. Rishi Richīka Aurava, a son of Urva married Satyavatī, sister of King Gādhi. Jamadagni was born to Richīka and Satyavatī.

		In CE
1.	Chyavana I	13600-13560 BCE
2.	Urva	13560-13530 BCE
3.	Richīka	13530-13500 BCE
4.	Jamadagni I	13500-13450 BCE

Rishi Gritsamada (13600 BCE onwards)

Rishi Gritsamada was the son of Vītahavya. Gritsamada joined the family of Bhrigus under the influence of King Indra. Mahābhārata's Anuśāsana Parva gives the following names of the descendants of Rishi Gritsamada.

1. Gritsamada
2. Sutejas
3. Varchas
4. Vihavya
5. Vitathya
6. Satya
7. Śānta

8. Rishi Śravas or Suśravas
9. Tama
10. Prakāśa
11. Vāgīndra
12. Pramati (married Apsarā Ghritāchī)
13. Ruru or Rurukeśa (married to Pramadvarā)
14. Rishi Śunaka
15. Rishi Śaunaka

According to a legend, Ruru married Pramadvarā, daughter of Menakā and Viśvāvasu. Menakā abandoned Pramadvarā on the banks of a river. Rishi Sthūlakeśa brought her up. Seemingly, there is a chronological error in the genealogy of Ruru given in the Mahābhārata. Since Ruru married Pramadvarā, daughter of Menakā, he must be a junior contemporary of Viśvāmitra I. Therefore, we have to fix the date of Ruru around 13450-13400 BCE.

Atharva Āṅgiras II, Utathya and Dīrghatamas Māmateya (13550-13400 BCE)

Brahmaṅda Purāṇa tells us the genealogical account of Rishi Atharva Āṅgiras II.[40] Atharva had three wives, Surūpā (daughter of Rishi Marichi), Svarāt (daughter of Rishi Kardama) and Pathyā (a descendant of Manu dynasty). Brihaspati II was born to Surūpā and Gautama, Ayāsya, Vāmadeva, Utathya, Uśati were born to Svarāt. Dhriṣṇi, Samvarta and Mānasa were born to Pathyā. Dīrghatamas was the son of Utathya and Mamatā. Kitava was the son of Ayāsya. Brihaduktha was the son of Vāmadeva. Dhriṣṇi's son was Sudhanvā. Riṣabha was the son of Sudhanvā. The Ribhus known as Rathakāras (chariot makers) were the descendants of Sudhanvā. Bhāradwāja was the son of Brihaspati. Gradually, the fifteen ancestries of Āṅgirasa gotra (Ayāsya, Autathya, Auśija, Vāmadeva, Bhāradwāja, Sānkrita, Garga, Kaṇvarathītara, Mudgala, Vishnuvriddha, Hārita, Kapi, Rukśabhāradwāja, Arṣabha and Kitava) evolved. Seemingly, Rishi Kapi of Āṅgirasa gotra was the progenitor of the Kapis of Kishkindha of Rāmāyaṇa era. Later, Kapi became synonymous to Vānara (monkey) in Laukika Sanskrit.

Rishi Dīrghatamas was the son of Utathya and Mamatā. Utathya was the elder brother of Brihaspati II. Aitareya and Śatapatha Brāhmaṇas mention that Dīrghatamas Māmateya was the contemporary of King Bharata the Great (13450-13400 BCE). He was blind by birth. The Mahābhārata narrates that Dirghatamas married Pradweśī. Gautama was their eldest son.[41] Pradweśī was fed up with the behaviour of her husband. Therefore, she commanded her sons to tie their father to a raft and threw the raft into the river. Dīrghatamas drifted on the waters for many days. The Ānava King Bali, a descendant of Anu I (brother of Puru I), rescued him and took him to his palace. Probably, Balia of Uttar Pradesh was the kingdom of Ānava King Bali.

During those days, the descendants of Saptarṣis were highly regarded in society. Ānava King Bali requested Dīrghatamas to raise a few wise sons through his wife Sudeṣṇā. But Sudeṣṇā sent her Śūdra maid to Dīrghatamas. Kakśīvant Dīrghatamas was born to Śūdra maid. King Bali again asked Sudeṣṇā to have children from Rishi Dīrghatamas. Thus, Rishi Dīrghatamas had five children named Aṅga, Vaṅga, Kaliṅga, Pundra and Suhma from Sudeṣṇā. The kingdom of Bali was divided among his five children. Thus, five janapadas in the names of Aṅga (east of Magadha), Vaṅga (South Bengal), Kaliṅga (Orissa), Pundra (North Bengal) and Suhma (Bangladesh) came into existence. Vāyu Purāṇa gives the genealogy of Ānava King Bali.[42]

Historians mistakenly assumed Dīrghatamas Autathya and Dīrghatamas Auchathya to be the same. In reality, Utathya's son Dīrghatamas lived during the time of King Bali (13500-13450 BCE) and King Bharata (13450-13400 BCE), whereas Uchathya's son Dīrghatamas lived around 11050 BCE after Rishi Agastya (11290-11200 BCE). Dīrghatamas Auchathya (11050 BCE) was the author of 150 hymns of Rigveda.

The Manu Dynasty of Early Rigvedic Era

Purāṇas relate that there were mainly 14 Manus, Svāyambhuva, Swārochiṣa, Uttama, Tāpasa, Raivata, Chākśuṣa, Vaivasvata, Sāvarṇi, Dakśa Sāvarṇi, Brahma Sāvarṇi, Dharma Sāvarṇi, Rudra Sāvarṇi, Deva Sāvarṇi and Indra Sāvarṇi. There is no reference of these different names

in Rigveda, but it refers to Manu and Dhruva several times. Uttama was the brother of Dhruva. All 14 Manus were historical persons though Purāṇas mention seven future Manus. Seven Manus, from Svāyambhuva to Vaivasvata, lived around 14500-11200 BCE. Seven later Manus, from Sāvarṇi to Indra Sāvarṇi, were probably the descendants of Vaivasvata Manu and they might have lived around 11200-11000 BCE. Most probably, Sāvarṇi Manu had six sons, namely Dakśa, Brahma, Dharma, Rudra, Deva and Indra.

Swārochiṣa Manu (13400 BCE) and Uttama Manu (13200 BCE)

Purāṇas tell us that Swārochiṣa was the son of Swarochi and Apsarā Mrigī. Uttama II was the descendant of King Uttama I, grandson of Svāyambhuva Manu and the brother of Dhruva. Evidently, Indian astronomers simply divided the time span of the elapsed Yugas into Manvantaras and named the second Manvantara as Swārochiṣa and the third Manvantara as Uttama. Uttama I lived 14400-14350 BCE but there is no information of Swārochiṣa Manu before Uttama I and his father Swarochi. In all probability, Uttama II, a later descendant of Uttama Manu, lived around 13200 BCE whereas Swārochiṣa Manu flourished around 13400 BCE.

Tāpasa Manu (13000 BCE)

Mārkandeya Purāṇa says that Tāpasa Manu was the son of Surāshtra and his wife Utpalavatī. The Puru Kings started dominating the region of Brahmāvarta and Sapta-Sindhu region around 13500 BCE. King Bharata (13450-13400 BCE) established a powerful kingdom in north India. Therefore, Surāshtra, the father of Tāpasa Manu had to shift his kingdom to Gujarat. Saurashtra region of Gujarat is named after King Surāshtra of the Manu dynasty.

Raivata Manu (~12700-12500 BCE)

King Vikramaśīla was the descendant of Priyavrata, the son of Svāyambhuva Manu. Kālindī was his wife. King Durgama, son of Vikramaśīla, married Revatī, daughter of Rishi Ritavāk. Raivata Manu was the son of King Durgama and RevatI. It appears that the kingdom of Raivata Manu was located close to Girnar hills of Saurashtra, which came to be known as Raivataka Parvata. Mārkandeya Purāṇa indicates the

beginning of New Year with Revatī Nakśatra during the time of Raivata Manu.[43] Rishi Vasiṣṭha introduced the beginning of New Year from autumnal equinox, or Śarad season. The Aśvinī hymns of the 7th Mandala indicate that autumnal equinox was at Aśvinī Nakśatra during the time of Vasiṣṭha (13500 BCE). Autumnal equinox shifted to Revatī Nakśatra during the time of Raivata Manu (12500 BCE).

Chākśuṣa Manu (~12000-11800 BCE)
Mārkandeya Purāṇa indicates that Chākśuṣa Manu was the adopted son of King Vikrānta. He married princess Vidarbhā, daughter of King Ugra. A hymn of Rigveda was written by Chākśuṣa Manu.[44] The Anukramaṇī of Rigveda indicates that the son of Āpaḥ was Manu, Manu's son was Chakśu and Chakśu's son was Agni.

Vaivasvata Manu (11275-11175 BCE)
Vaivasvata Manu was the son of Vivasvān and the grandson of Kaśyapa. His kingdom was located in Saurashtra close to the Girnar Hills. We will discuss the date of Vaivasvata Manu in the next chapter.

3

The Age of the Compilation of Vedas (11500-10500 BCE)

Devas and Asuras were the cousins and descendants of Ādityas. They became bitter political rivals and were regularly in conflict starting from the time of Indra I and Vishnu I – around 14000 BCE. Devāsura Saṅgrām, or the war between Devas and Asuras, reached its zenith before the time of Vaivasvata Manu. During the time of Chākśuṣa Manvantara (12000-11200 BCE), Asuras defeated Devas and took over the control of more than 100 cities belonging to Devas. Asura King Śambara and his descendants posed a great challenge to King Indra around 11325 BCE. Finally, Indra defeated Śambara and re-established the supremacy of Devas around 11300 BCE.

Haihayas vs Kāshi Kings

Apart from the conflicts of Devas and Asuras, the Kāshi kings and Haihayas were also waging war against each other around 11400-11300 BCE. Haihayas and Talajaṅghas were the descendants of King Vītahavya and his son Śaryāti (13600 BCE). Haryāśva was the king of Kāshi around 11400 BCE – Haihayas invaded Kāshi during his reign and killed him. The Mahābhārata gives the genealogy of Haryāśva. Sudeva, the son of Haryāśva defeated Haihayas. His son Divodāsa fortified the city of Kāshi. Divodāsa killed the sons of Haihaya King Bhadraśreṇya and defended Kāshi, but then Durdama, son of Bhadraśreṇya defeated Pratardana, son of Divodāsa. Later, Pratardana subjugated Haihayas and recaptured Kāshi. King Pratardana Daivodāsi was the author of a hymn of Rigveda.[1]

Vatsa, or Ritadhvaja, was the son of Pratardana. Vatsa janapada was named after King Vatsa of Kāshi. Alarka, son of Vatsa, was the contemporary of Rishi Agastya and Lopāmudra (11290-11200 BCE).

	Kāshi Kings	In CE
1.	Haryāśva	11400-11350 BCE
2.	Sudeva	11350-11325 BCE
3.	Divodāsa	11325-11300 BCE
4.	Pratardana	11300-11275 BCE
5.	Vatsa or Ritadhvaja	11275- 11250 BCE
6.	Alarka (Subāhu was his brother)	11250-11200 BCE
7.	Sannati (son of Alarka)	11200-11175 BCE

Rishi Gālava, the Disciple of Viśvāmitra II (11325 BCE)

According to the story of Gālava given in the Mahābhārata and Purāṇas, Gālava approached King Yayāti (of Manu dynasty) in order to earn *Gurudakśiṇā* for his Guru Viśvāmitra II. Gālava obtained Mādhavi, daughter of Yayāti, and offered her in turn to King Rohidāśva of Ayodhyā, King Divodāsa of Kāshi, King Uśīnara of Bhojanagara and Viśvāmitra II. They begot of her one son each, Vasumanas, Pratardana, Śibi and Aṣṭaka. Then Gālava returned Mādhavi back to her father. This story indicates that Gālava was a contemporary of Divodāsa and Pratardana. Rigveda also indicates the contemporaneity of Śibi or Śivi, Pratardana and Vasumanas.[2]

Śakra (Indra), Śachī, Divodāsa Atithigva and Asura King Śambara, the Son of Kulītara (11325 BCE)

Indra married Śachī, daughter of Asura King Puloman. Asura King Śambara, the son of Kulitara, was occupying more than 100 cities. Indra defeated and killed Śambara. Divodāsa Atithigva supported Indra in his expedition against Śambara. Rigveda refers to Indra, Śambara and Divodāsa Athithigva.[3]

Asura King Krishna (11325 BCE)

Rigveda refers to one Asura King Krishna.[4] Sāyaṇa explains that Asura King Krishna was camping on the banks of Aṅśumatī River with his army of ten thousand solders. Indra came along with Brihaspati and killed Asura King Krishna and his army.

King Kritavīrya (11225 BCE) and His Son Arjuna Kārtavīrya (11200 BCE)

Haihaya King Kritavīrya married Sugaṅdhā, daughter of King

Hariśchandra (11250-11190 BCE). His son Arjuna Kārtavīrya defeated Karkoṭa Nāga and occupied the city of Māhiṣmatī. Arjuna Kārtavīrya had many sons. Once Kārtavīrya and his sons visited the hermitage of Jamadagni (a descendant of Jamadagni I) and killed Jamadagni in a conflict over Kāmadhenu. Paraśurāma, son of Jamadagni came to know about the incident from his mother. He killed all the sons of Kārtavīrya except five – namely Jayadhvaja, Śūrasena, Vriṣabha, Madhu and Urjita (तस्य पुत्रसहस्रेषु पञ्चैवोर्वरिता मृधे। जयध्वजः शूरसेनो वृषभो मधुरूर्जितः ||). Later, Paraśurāma went to South India and settled at Paraśurāma-Kśetra (Konkan and Malabar Coast). Arjuna Kārtavīrya was also known as Sahasrabāhu. Rigveda refers to King Sahasrabāhu.[5]

Datta Ātreya (11270 BCE)

Rishi Atri and Anasūyā had three sons: Datta Ātreya, Durvāsa II and Chandra. Rishi Datta Ātreya was the contemporary of Haihaya King Arjuna Kārtavīrya. The authorship of *Avadhūta Gītā* is attributed to Datta Ātreya.

Prajāpati Dakśa II Prachetas (11310 BCE)

Dakśa II was the son of Prachetas. He belonged to the lineage of Ādityas. Dakśa had many daughters and one son, Nārada. Rishi Kaśyapa III, a later descendant of Kaśyapa I, married thirteen daughters of Dakśa (Aditi II, Diti, Kadru, Danu, Ariṣṭhā, Surasā, Surabhi, Vinatā, Tāmrā, Krodhavaśā, Irā, Viśvā, and Muni). It appears that Dakśa married off his daughters to the descendants of Kaśyapa, Marīchi, Atri, Aṅgirasa, Vasiṣṭha, Kratu, Bhrigu, Pulastya, Pulaha, and more. He also married off his daughter Satī to Śiva.

The Date of Rishi Agastya and Lopāmudrā (11290-11200 BCE)

According to Tamil Sangam legends, Agastya arrived in Tamil Nadu before the beginning of the first Sangam era (11226 BCE).[6] Tamil poet Nakkirar II, in his commentary on the treatise "*Iraiyanar Agapporul*", records that the first Sangam period is said to have lasted for 4400 or 4440 years, the second Sangam period lasted for 3700 years and the third Sangam period ended after 1850 years. Rishi Agastya chaired the first council of the first Sangam period. The third Sangam period of 1850 years had ended

during the reign of Ukkiraperu Valudi around 1276 BCE. Thus, we can roughly fix the date of the beginning of the first Sangam era around 11226 BCE and the lifetime of Rishi Agastya around 11290-11200 BCE. I have discussed the chronology of Tamil Sangam era in detail in my book titled " *The Chronology of India : From Mahabharata to Medieval Era*".

Rishi Agastya married Lopāmudrā, the daughter of the king of Vidarbha. Lopāmudrā was the contemporary of Kāshi King Alarka (11250-11200 BCE), who was imparted spiritual knowledge by Datta Ātreya and Madālasā. Lopāmudrā composed two mantras of the 179th hymn of the first Mandala of Rigveda. The mantras of Lopāmudrā indicate the beginning of New Year (Saṁvatsara) from the autumnal equinox (Śarad Ritu).

Prajāpati Rudra or Mahādeva Śiva (11280-11200 BCE)

Mahādeva Śiva belonged to the lineage of Rudras. He was the contemporary of Agastya. He was a great Rajarshi and the founder of the schools of Yoga, Nātya, Saṅgīta, Śilpa, Vyākaraṇa, and so on. His legendary status led the Rudras to be known as the Śivas in the later Rigvedic period. Most probably, the area of Śivalik hills from Jammu to Kailash, and the Pir Panjal area of Kashmir, was under the control of Mahādeva Śiva.

Śiva married Satī Dākśāyaṇī also known as Aparṇā. Prajāpati Dakśa, the father of Sati, organised a Yajña and invited all Devas except Śiva and Satī. Satī was deeply upset for not being invited by her father but decided to meet her father. When she complained about it, Prajāpati Dakśa not only insulted her but also Śiva. Furious, Sati immolated herself. Śiva, angered by the death of Satī, destroyed the palace of Dakśa but spared his life. The astronomical data indicates that Prajāpati Dakśa performed the Yajña when the winter solstice shifted from Ārdrā Nakśatra to Mrigaśirā Nakśatra around 11250 BCE. The death of Satī during the Yajña led to the assumption of Śiva and Prajāpati Dakśa to be the deities of Ārdrā and Mrigaśirā Nakśatras respectively. When the list of twenty-eight Nakśatras was reset starting from Mrigaśirā, Prajāpati Dakśa had been identified with Mrigaśirā, and the twenty-seven Nakśatras starting from Rohiṅī were assumed to be the twenty-seven daughters of Prajāpati. Gradually, Prajāpati became synonymous with Saṁvatsara in astronomical terms.

When the winter solstice was shifted from Mrigaśirā to Rohiṇī (also known as Uṣas) around 10250 BCE, Vedic astronomers metaphorically narrated that Prajāpati lusted after his own daughter Uṣas, or Rohiṇī. Therefore, Prajāpati was killed by Rudra. These Vedic astronomical legends of Prajāpati's Yajña and Prajāpati's lust for Uṣas clearly indicate the precession of winter solstice from Ārdrā to Mrigaśirā around 11250 BCE and from Mrigaśirā to Rohiṇī around 10250 BCE.

After the death of Satī, Śiva married Pārvatī, also known as Umā. Śiva also married to Kāmākśī, the sister of Vishnu and Mīnākśī, the daughter of Pāndya King Malayadhvaja. Nandi, a son of Surabhi and Rishi Kaśyapa, became Mahādeva Śiva's Vāhana and the Dvārapāla of Kailash.

Vivasvān Manu (11295 BCE)

Vivasvān was the son of Rishi Kaśyapa and Aditi. He composed the 13th hymn of the tenth Mandala of Rigveda. Vivasvān had four sons: Vaivasvata Manu, Yama, Sāvarṇi Manu and Śani.

Vaivasvata Manu (11275-11175 BCE)

Vaivasvata Manu was the son of Vivasvān. A great flood during his reign became an epoch in the chronology of ancient India. Most probably, incessant heavy rains and melting glacial water caused a great flood in the southern region of Sapta-Sindhu around 11200 BCE. Most probably, a part of Kashmir valley was a glacial lake known as Satīsar during the Rigvedic period. This glacial lake was formed in Kashmir Valley during the period of Meltwater Pulse 1A around 12700-11500 BCE. The closed Varāhamūla

(Baramulla) pass was holding the melted waters of glaciers. Around 11200 BCE, a massive earthquake might have opened up Baramulla pass and the water of Satīsar had flown out of Kashmir Valley which caused a great flood in Madra, Śālva, Sindh and Gujarat areas.

Manu Vaivasvata composed five hymns of Rigveda.[7] He had nine sons: Ikśvāku, Nābhāga, Dhriṣṭa, Śaryāti, Nāriṣyanta, Pramashu, Rishta, Karūṣa and Priśadhra. His only daughter Ilā was married to Budha, the son of Chandra and the grandson of Atri. His brother Yama composed the 14th hymn of the tenth Mandala of Rigveda.

Vishnu III and Rishi Nārāyaṇa (11250-11180 BCE)

Vishnu I (14000 BCE) was the contemporary of Indra I and Vishnu II was the contemporary of Indra II (13650 BCE) who killed Vritrāsura. Vishnu III (11250 BCE) was the contemporary of Śiva and Manu Vaivasvata. Vishnu II killed Asuras Madhu and Kaitabha, who had stolen Vedas from Brahma. The famous Puruṣa Sūkta of Rigveda was written by Rishi Nārāyaṇa.[8] Taittirīya Āraṇyaka of Krishna Yajurveda contains a Nārāyaṇa Sūkta.[9] Most probably, Rishi Nārāyaṇa was Vishnu III.

Rishi Vasiṣṭha Maitrāvaruṇi (11150 BCE)

Rishi Vasiṣṭha Maitrāvaruṇi was the author or editor of many Sūktas of the seventh Mandala of Rigveda. He refers to Rishi Agastya. He claims himself to be the son of Vasiṣṭha and Urvaśī, and blessed by Mitra and Varuṇa.[10]

Rishi Mathita Yāmāyana or Bhrigu Vāruṇi or Bhārgava Chyavana (11150 BCE)

Interestingly, a mantra of the tenth Mandala of Rigveda indirectly indicates the beginning of Rabi crop season (planting of Rabi crops) at Revatī Nakśatra and the flowering of Rabi crops at Punarvasū Nakśatra.[11] Rabi crops like wheat and barley take three months to flower. The Sanskrit word "Punarvasū" (Punaḥ = again, Vasu = starts flowering) indicates the meaning of flowering of the second crop. If we consider the occurrence of autumnal equinox at Revatī and the winter solstice at Punarvasū, the period was 12900-11900 BCE. If we consider the beginning of Rabi season one month after autumnal equinox, the period was around 11000 BCE.

Rigveda Anukramaṇī attributes the authorship of this hymn to Rishi Mathita Yāmāyana or Bhrigu Vāruṇi or Bhārgava Chyavana. The name of Yāmāyana clearly indicates that Mathita was a grandson or a descendant of Yama, brother of Vaivasvata Manu. Therefore, Mathita Yāmāyana must be dated on or after 11150 BCE.

Rishi Dīrghatamas Auchathya (11125 BCE)

Uchathya, the father of Dīrghatamas, was the contemporary of Ikśvāku King Māndhātā (11150-11100 BCE) as mentioned in the Mahābhārata. Therefore, Rishi Dīrghatamas Auchathya lived around 11125 BCE. The Paitāmaha Siddhānta of later Rigvedic era followed the lunisolar calendar of five years starting from Śarad Ritu or the autumnal equinox. The list of Nakśatras was probably revised around 11200 BCE, considering Mrigaśira as the first Nakśatra. Rishi Dīrghatamas Auchathya states in his hymn: "*The dog awakened Ribhus at the end (of Śarad season) in Saṁvatsara.*"[12] In this context, the dog means Mrigaśirā Nakśatra (Canis Major constellation).

The Date of Devakīputra Krishna (11150-11050 BCE)

Mahānārāyaṇopaniṣad informs us that Nārāyaṇa, Vāsudeva and Vishnu were all names of the same deity (नारायाणाय विद्महे वासुदेवाय धीमहि तन्नो विष्णुः प्रचोदयात् ||).[13] It also refers to Vishnu as Krishna.[14] Interestingly, Cḥāndogyopaniṣad states that Ghora Āṅgiras was the guru of Krishna Devakīputra.[15] Rishi Ghora Āṅgiras was the author of a mantra of Rigveda.[16] Kauṣītakī Brāhmaṇa also refers to Rishi Ghora Āṅgiras as a purohita of Prajāpati Vivasvān.[17]

Evidently, Devakīputra Krishna had flourished in the later Rigvedic era. Turvaśa's descendants (Yavanas) of Bactria migrated to Anatolia and Greece during the Rigvedic era and worshipped Vāsudeva as Heracles. It appears that the editors of Itihāsa texts and Purāṇas inadvertently mixed up the legends of Devakīputra Vāsudeva Krishna and Sri Krishna of the Mahābhārata era. It may be noted that Devakīputra Krishna was the disciple of Ghora Āṅgirasa whereas Sri Krishna of the Mahābhārata era was the disciple of Guru Sāndīpani. We will discuss the date of Devakīputra Krishna at length in Chapter 7.

Narakāsura (11150-11000 BCE)
Hiraṇyākśa was the son of Diti and Rishi Kaśyapa. He was called Daitya (son of Diti). Narakāsura was the descendant of Hiraṇyākśa and founded his kingdom in Prāgjyotiṣa. He persecuted neighbouring kingdoms of Devas and abducted 16100 women. Devakīputra Krishna killed Narakāsura and liberated the women of Devas. However, since these women were taken captive in the palace of Narakāsura, society did not accept them and Devakīputra Krishna had to marry all of them symbolically to ensure a respectful life for these women.

The Great Flood During the Time of Vaivasvata Manu (11200 BCE)
The earliest account of the great flood is found in Śatapatha Brāhmaṇa.[18] During the period 14000-11200 BCE, melting glaciers caused Kashmir Valley to become a massive glacial lake. The period 11500-11000 BCE also coincided with peak monsoonal rains over India. The heavy rainfall for a long duration might have also resulted in a massive inflow of water into the rivers Sindhu and Sarasvati. Seemingly, a massive earthquake that occurred around 11200 BCE had opened up Baramulla Pass, which resulted in flash flood in the regions of Pakistan, Rajasthan and Gujarat. The kingdom of Vaivasvata Manu was located in Gujarat and south-western Rajasthan. It appears that two major rivers of the Sapta-Sindhu region, Marudvridha and Ārjikīyā, Paruṣṇi (a tributary of Śutudrī) and Asiknī (a tributary of Marudvridha) originated from the glacial lake of Kashmir Valley. These rivers and tributaries gradually vanished after the great flood. Possibly, a channel of Yamuna which was a tributary of Sarasvati, also changed the course during this period. The rapid rise of sea level around 12500-11800 BCE also submerged the coastal areas (the city of Kuśasthalī) of Gujarat.

It seems Vaivasvata Manu had supported his neighbour King Matsya, who eventually established the Mastya Kingdom or Matsya janapada. Probably, King Matsya also received support from Vishnu III. King Matsya helped Vaivasvata Manu during the great flood. Śatapatha Brāhmaṇa poetically narrated this story. The same has been mythologised by Puranic authors. It may also be noted that Satyavatī, wife of King Śāntanu of the

Mahābhārata era, was not the daughter of a fisherman. She belonged to the royal family of Matsya janapada.

Prajāpati Parameṣṭhin (11225 BCE)

Prajāpati Parameṣṭhin was the disciple or the son of Brahma III (11250 BCE). Prajāpati Parameṣṭhin composed the famous Nāsadīya Sūkta of Rigveda.[19]

Hiraṇyakaśipu, Prahlāda, Virochana and Rājā Bali (11260-11100 BCE)

Hiraṇyakaśipu was the younger brother of Hiraṇyākśa. Prahlāda was the son of Hiraṇyakaśipu and a devotee of Vishnu. Vishnu III killed Hiraṇyakaśipu. Rājā Bali was the grandson of Prahlāda. He was a great devotee of Vishnu. Vāmana or Vāmadeva, a descendant of Vishnu, helped Devas to take over Rājā Bali's kingdom to ensure the complete elimination of Daitya kings. Though Rājā Bali was a Daitya king, he was very kind to people, being the grandson of Prahlāda. He promised the people of his kingdom that he will visit once every year. Seemingly, the New Year of Asuras commenced from Vasanta (spring) season. During the period 11100 BCE, Sun's position in Simha Rāśi marked the commencement of Vasanta season. Thus, the Onam festival of Kerala in Chingham month was originally the celebration of the arrival of Vasanta season.

Aila Purūravā II and Urvaśī (11240 BCE)

Puru or Purūravā I was the progenitor of the Aila dynasty of the mid-Rigvedic era. Chandra or Soma II (11290 BCE) married the daughter of Dakśa Prachetas. Soma II's son Budha (11260 BCE) married Ilā, daughter of Manu Vaivasvata. Purūravā II was the son of Budha. Rigveda and Śatapatha Brāhmaṇa relate the story of Purūravā II and Urvaśī.

Rishi Vibhāṇḍaka and Urvaśī had a son, Riṣyaśriṅga. Rishi Vasiṣṭha also had a son, Vasiṣṭha Maitrāvaruṇi, from Urvaśī. According to Purāṇas, Urvaśī was abducted by an Asura when she was returning from the Āśrama of Vibhāṇḍaka. Purūravā rescued her and requested her to marry him. Urvaśī agreed but with certain conditions. The story of Purūravā and Urvaśī has been beautifully narrated in Śatapatha Brāhmaṇa. Purūravā and Urvaśī stayed together for four Śarad seasons (*Rātriḥ Śaradaśchatasraḥ*).

Aila Purūravā and Urvaśī wrote a Sūkta of Rigveda as a dialogue (Saṁvāda Sūkta) between them.[20] The reference of Śarad season in this Sūkta clearly indicates that the Śaradādi calendar (beginning of New Year at autumnal equinox) was in vogue in the later Rigvedic period.

Riṣyaśriṅga (11220-11150 BCE)
Riṣyaśriṅga was the son of Rishi Vibhāṇḍaka and Urvaśī. He composed a mantra of the 136th hymn of the tenth Mandala of Rigveda.

King Ikśvāku (11250-11175 BCE)
Ikśvāku was the son of Vaivasvata Manu. Rigveda refers to King Ikśvāku.[21] According to Mārkandeya Purāṇa, Sadāda was a son of Ikśvāku and Purañjaya was a son of Sadāda. Ikśvāku had a son called Danḍaka. Śukrāchārya cursed Danḍaka for carrying off his daughter Abjā. Danḍaka founded his kingdom in South India.

Yauvanāśva Māndhātā (11150-11100 BCE)
Māndhātā was a king of Ikśvāku dynasty. He was the son of King Yuvanāśva, therefore he was also known as Yauvanāśva. The text of Jaiminīya Aśvamedha indicates that Yauvanāśva was a senior contemporary of Devakīputra Krishna. He was the author of a hymn of Rigveda.[22] Sāyaṇa refers to him as Rajarshi. Māndhātā married Bindumatī, daughter of Yādava King Śaśabindu and granddaughter of Chitraratha. He had three sons, Purukutsa, Ambarīṣa and Muchukunda. Rishi Kutsa Āṅgirasa refers to King Māndhātā in Rigveda.[23]

Rishi Saubhari (11130-11050 BCE)
Rishi Saubhari was a junior contemporary of King Māndhātā. He was married to the daughters of Māndhātā and was the contemporary of Devakīputra Krishna and Kāliya Nāga. Maharshi Kapila refers to the story of Saubhari (*Na Bhogād Rāgaśāntir Munivat*) in his Sāṅkhya Sūtras.

Nahuṣa and Yayāti (11210-11150 BCE)
Nahuṣa was the son of Ayu, a descendant of Aila Purūravā dynasty. Yayāti was the son of Nahuṣa. Yayāti married Devayāni, daughter of Śukrāchārya, as well as Śarmiṣṭhā, daughter of Asura King Vriṣaparvan. Yayāti is mentioned as the Rishi of a Rigvedic hymn.[24] There were two

Nahuṣas. One Nahuṣa belonged to the lunar dynasty and was the father of Yayāti.[25] Another Nahuṣa belonged to the lineage of Manu.[26]

Chitraratha and Śaśabindu (11175-11150 BCE)

Chitraratha and Śaśabindu were the descendants of the Yadu dynasty. Śaśabindu was the father-in-law of the Ikśvāku King Māndhātā (11150-11100 BCE). Rigveda refers to King Chitraratha.

Ambarīṣa and Sindhudvīpa (11220-11160 BCE)

Ambarīṣa was the son of Nābhāga and the grandson of Vaivasvata Manu. Sindhudvīpa was the son of Ambarīṣa. It seems that Ambarīṣa and Sindhudvīpa wrote some mantras of a hymn of Rigveda.[27]

King Hariśchandra (11250-11200 BCE)

Aitareya Brāhmaṇa tells the story of King Hariśchandra, son of Vedhas.[28] Hariśchandra had many wives but no son. Finally, he begot a son named Rohita or Rohitāśva by the grace of God Varuṇa. After his birth, Varuṇa came in the dreams of Hariśchandra and demanded that the child be sacrificed for him. The king postponed the sacrifice multiple times citing various reasons, but finally agreed to it when Rohita became an adult. Rohita refused to be sacrificed and escaped to the forest. An angry Varuṇa afflicted Hariśchandra with a stomach illness. Later, Rohita managed to substitute himself with Śunaḥśepa, the second son of Ajīgarta. Śunaḥśepa prayed to Rigvedic deities and was saved from the sacrifice. Hariśchandra's illness was also cured because of Śunaḥśepa's prayers. Later, Śunaḥśepa Ājīgarti was adopted by the sage Viśvāmitra and came to be known as Devarāta. Śunaḥśepa composed seven hymns of Rigveda.[29]

Rishis Parvata and Nārada lived in the palace of King Hariśchandra. Aitareya Brāhmaṇa mentions that Viśvāmitra was King Hariśchandra's Hotā, Jamadagni was Adhvaryu, Vasiṣṭha was Brahma, and Ayāsya Āṅgirasa was his Udgātā (*Tasya ha Viśvāmitro Hotāsīt Jamadagnir Adhvaryu Vasiṣṭho Brahma Ayāsya Udgātā* ।).[30] Most probably, King Hariśchandra belonged to the Manu dynasty and the lineage of the kings of Ayodhyā. Since all kings of Ayodhyā have been generally referred to as

Ikśvākus, Aitareya Brāhmaṇa mentions Hariśchandra as an Ikśvāku king, but he was not the descendant of Ikśvāku.

King Bhajeratha (Bhagīratha?) [10900-10850 BCE]

Rigveda refers to the Ikśvāku King Bhajeratha.[31] It seems Bhajeratha was the famous Bhagīratha, son of King Sagara.

King Daśaratha

There is a reference of "Daśaratha" in Rigveda but Sāyaṇa clearly explains that Daśaratha means "Ten Rathas" in this hymn.[32] Traditional commentary of Rigveda clearly indicates that Daśaratha of Rigveda cannot be identified with King Daśaratha, father of Rāma. There was also an ancient Yadu king named Daśaratha, son of Navaratha, who probably lived around 11900 BCE. Sahasrabāhu (Kārtavīryārjuna) was also known as Daśaratha in the Khotanese traditional sources.

The Later Bharatas (Paurava) in Rigveda

King Bharata (13450 BCE) was the founder of Bharata dynasty. Ajamīdha (13350 BCE), the great grandson of King Bharata, was also a celebrated king. During the period 13300-11300 BCE, many lineages of Bharata kings might have flourished. Tritsu Bharatas were ruling in Pāñchāla region during the time of Chākśuṣa Manvantara (12000-11200 BCE). Rigveda informs us that King Divodāsa Atithigva supported Indra (Śakra or Śachīpati) in his successful expedition against the Asura King Śambara. Rigveda indicates the following genealogy of the Tritsu Bharatas:

	Tritsu Bharata Kings	**In CE**
1.	Devavāta	11400-11350 BCE
2.	Sriñjaya Daivavāta	11350-11325 BCE
3.	Divodāsa Atithigva	11325-11300 BCE
4.	Pijavana	11300-11275 BCE
5.	Sudāsa Paijavana	11275-11230 BCE
6.	Sahadeva (a descendant of Sriñjaya)	11230-11200 BCE
7.	Somaka Sāhadevya	11200-11150 BCE

King Sudāsa and the Date of Dāśarājña War (11250 BCE)
The hymn composed by Rishi Vasiṣṭha Maitrāvaruṇi (11150 BCE) and the hymn composed by Rishi Viśvāmitra Gāthina (11150 BCE) refer to Tritsu Bharata King Sudāsa and Dāśarājña War.[33] Vasiṣṭha Maitrāvaruṇi was the son of Vasiṣṭha and Urvaśī. Apsarā Urvaśī had sons from Rishi Vasiṣṭha, Rishi Vibhāṇḍaka and King Purūravā II. Viśvāmitra Gāthina was a later Viśvāmitra and the son of Gāthin, whereas the first Viśvāmitra was the son of Gādhi. Therefore, Vasiṣṭha Maitrāvaruṇi, Riṣyaśriṅga, King Sudāsa and Viśvāmitra Gāthina were contemporaries. Considering this synchrony, we can roughly fix the date of Dāśarājña War around 11250 BCE.

King Abhyāvarti Chāyamāna and King Sriñjaya Daivavāta (11350 BCE)
Rigveda refers to the Tritsu Bharata King Sriñjaya Daivavāta and his contemporary, the Prithu King Abhāvarti Chāyamāna, the son of Chāyamāna.[34]

Somaka Sāhadevya and Rishi Vāmadeva Gautama (11200-11150 BCE)
Rishi Vāmadeva Gautama was the contemporary of King Somaka, the son of Sahadeva and grandson of Sudāsa.[35]

Rijrāśva, Ambarīṣa, Sahadeva, Bhayamāna and Surādhas (11200-11150 BCE)
A hymn of Rigveda was composed by Rijrāśva, Ambarīṣa, Sahadeva and Bhayamāna Surādhas – the sons of King Vriṣagira.[36]

The Yadu, Turvaśa, Druhyu, Anu and Puru Dynasties
Rigveda refers to five important dynasties of the early Vedic era: Yadus, Turvaśas, Druhyus, Anus and Purus. Later updaters of Purāṇas mistakenly assumed that Yayāti, son of Nahuṣa, was the progenitor of these dynasties. Rigveda and historical legends clearly indicate that these five dynasties came into existence before the beginning of Vaivasvata Manvantara.

Devāpi Ārṣṭiṣeṇa and His Brother Śāntanu of the Kuru Dynasty (10700-10600 BCE)
Bharatas were the descendants of Puru I and Kurus were the descendants of Bharatas. Aitareya Brāhmaṇa mentions that Rishi Tura Kāvaśeya

anointed Kuru King Janamejaya. According to Śatapatha Brāhmaṇa, Śrutasena, Bhimasena, Ugrasena and Kakśasena were the sons of Janamejaya Pārīkśita (*Pārīkśitīyāḥ*).

It seems King Riṣṭiṣeṇa was a descendant of Kakśasena and thrived around 10700-10600 BCE. Devāpi and Śāntanu were the sons of Riṣṭiṣeṇa. It may be noted that there was another Ārṣṭiṣeṇa, the son of Śala, and the great grandson of King Nahuṣa. Yāska's *Nirukta* and Śaunaka's *Brihaddevatā* inform us that Devāpi and Śāntanu were Kurus and the sons of Riṣṭiṣeṇa.[37] Devāpi became a Rishi and his younger brother Śāntanu succeeded his father Riṣṭiṣeṇa. There was a drought of twelve years during the reign of Śāntanu. Devāpi performed a Varṣakāma Yajña for his brother. Rishi Devāpi, the son of Riṣṭiṣeṇa, wrote a Varṣakāma Sūkta in Rigveda.[38] The monsoons had been weakened in India during the period 11000-10000 BCE. Most probably, the twelve-year drought was experienced around 10650-10600 BCE, during the reign of Śāntanu.

There were three Śāntanus in the history of the Kuru dynasty. Śāntanu I was the son of King Pratīpa and a great Ayurvedic physician (Mahābhiṣak). Some scholars have assumed Pratīpa and Riṣṭiṣeṇa to be the same but there is no such indication in Vedic literature. Śāntanu I was the elder brother of Devāpi and Bāhlīka. Śāntanu II, son of King Riṣṭiṣeṇa, was the younger brother of Devāpi II. Evidently, Śāntanu II only had one brother, Devāpi, whereas Śāntanu I had two younger brothers. Śāntanu III, the father of Vichitravīrya of the Mahābhārata era, was the son of Paryaśravā. The Mahābhārata has mistakenly mixed up the genealogy of the early Kurus and the later Kurus.[39] Interestingly, the Mahābhārata refers to Kakśasena and Riṣṭiṣeṇa as ancient kings.[40]

श्रूयन्ते हि पुरा विप्रा विष्वामित्रादयो नृपाः ।
विश्वामित्रोऽसितश्चैव जनकश्च महीपतिः ॥
कक्षसेनार्ष्टिषेणौ च सिन्धुद्वीपश्च पार्थिवः ॥

The Chronological History of Rigvedic Rishis:

The available Rigveda is the Saṁhitā of Śākala and Bāṣkala branches. This text of Rigveda was finally compiled by Rishi Śaunaka in Tretā Yuga. There are 1028 Sūktas, 10552 Mantras, and a total of 153826 words in Rigveda. The Anukramaṇīs, or indices, complied by Rishi Śaunaka give the name

of the Rishi, Devatā and Cḥandas of every Sūkta. Devatā is the deity, or subject, and Cḥandas is the meter. So, Rishis were the authors of Sūktas. Yaska's *Nirukta* indicates the same (यस्य वाक्यं स ऋषिः या तेनोच्यते सा देवता). The oldest hymns of Rigveda were written by the families of Atri, Aṅgiras, Vasiṣṭha, Viśvāmitra, Gritsamada, Vāmadeva Gautama, Kaṇva, Agastya, Bharata and Bhrigu.

According to Rigvedic Anukramaṇīs, more than 160 Rishis composed their hymns. It may not be possible to arrive at the accurate chronology of all Rigvedic Rishis but we can roughly fix their chronological order. Aṅgiras, Marīchi and his son Kaśyapa, Bhrigu, Kratu, Pulaha and Pulastya were the earliest Rigvedic Rishis. The descendants of Pulaha, Pulastya and Kratu could not follow the discipline of Vedic Rishis, which is why there are no hymns of Pulaha, Pulastya and Kratu in Rigveda. Some hymns of Kratu II have been included in the appendix (Bālakhilya Sūktas) but he was a later descendant of Kratu and a contemporary of Agastya. Thus, Aṅgiras, Kaśyapa and Bhrigu were the early composers of Rigvedic hymns.

Purāṇas clearly indicate that the chronological history of Rigvedic Rishis begins from the time of Svāyambhuva Manu but, seemingly, the later updaters of Purāṇas have inadvertently mixed up the historical account of early Rigvedic Rishis of pre-Vaivasvata Manvantara and the Rigvedic Rishis of Vaivasvata Manvantara. Let us discuss the chronological and genealogical account of Rigvedic Rishis.

Brahma

Brahma I (14500 BCE) was the earliest Rishi who laid the foundation for research in Vedic sciences. His son, Svāyambhuva Manu, founded the Manu dynasty. Most probably, Saptarṣis were either the disciples or the followers of Brahma. Therefore, Saptarṣis were called Brāhmaṇas, i.e., Mānasaputras of Brahma. There were many Brahmas. One Brahma was the father of Sanaka, Sanatkumāra, Sanātana and Sanandana. Another Brahma (11260-11180 BCE) was a junior contemporary of Śiva (11280-11200 BCE) and Vishnu II (11250-11180 BCE). Parameṣṭhi and Prajāpati were the disciples of Brahma. Cḥāndogya Upaniṣad informs us that Prajāpati was the teacher of Indra and Virochana, the son of Prahlāda and the grandson of Hiraṇyakaśipu.

Bhrigu

Bhrigu was the Mānasaputra of Brahma I, the first Rishi. According to Matsya Purāṇa, Bhuvana, Bhauvana, Sujanya, Sujana, Kratu, Vasu, Mūrdha, Tyajya, Vasuda, Prabhava, Avyaya and Dakśa were the twelve sons of Bhrigu.[41] Seemingly, they were the descendants of Bhrigu. Matsya Purāṇa says that Bhrigu married Divya, daughter of Puloma, but another account informs us that Bhrigu also married Khyāti, daughter of Prajāpati Dakśa. Indra married Śachī, the daughter of Asura King Pulomā, in the beginning of Vaivasvata Manvantara. Therefore, Bhrigu, the husband of Divyā and Khyāti, was a later descendant of Bhrigu. He had two sons, Dhātā and Vidhātā, and a daughter, Śri (Lakśmī), from Khyāti. Vishnu married Śri (or Lakśmī).

Now the question is if Bhrigu was the son-in-law of Dakśa, how can Dakśa also be the son of Bhrigu? Evidently, Bhrigu I of Svāyambhuva Manvantara was the progenitor of Dakśas. Bhrigus existed before Viśvāmitra (13500 BCE). Chyavana I was the descendant of Bhrigu clan and the contemporary of Aśvinī Kumāras. He married Sukanyā, daughter of King Śaryāti I. Śaryāti I was the son of King Vītahavya, whereas Śaryāti II was the son of Manu Vaivasvata. Chyavana's son was Urva. Urva's son, Richīka, married Satyavatī, daughter of King Gādhi and sister of Viśvāmitra. Jamadagni I was the son of Richīka. The chronology of the early Bhrigus:

		In CE
	Bhrigu and his descendants	14500-13600 BCE
1.	Chyavana I	13600-13560 BCE
2.	Urva	13560-13530 BCE
3.	Richīka	13530-13500 BCE
4.	Jamadagni I	13500-13450 BCE

We have no information about the descendants of Jamadagni I from 13450 BCE to 11300 BCE. Probably, Bhuvana, Bhauvana, Sujanya, Sujana, Kratu, Vasu, Murdha, Tyajya, Vasuda, Prabhava, Avyaya and Dakśa were the descendants of Bhrigu during this period. Jamadagni I became one of the Saptarṣis along with Vasiṣṭha and Viśvāmitra.

Bhrigu II married the daughters of Asura King Pulomā and Prajāpati Dakśa. Thus, he was the contemporary of Śachīpati Indra, Dakśa, Kaśyapa, Śiva and the rest. Kavi, Chyavana II and Āpnuvāna were the sons of Bhrigu. Kavi's son was Uśanas or Śukrāchārya. Chyavana II married Manu's daughter Āruśī. Pramati was the son of Chyavana II. Matsya Purāṇa says that Āpnuvāna's son was Aurva and his son was Jamadagni II. Paraśurāma was the son of Jamadagni II. Āpnuvāna married Ruchi, daughter of Nahuṣa I, the son of Manu. Bhrigus were the traditional priests of Haihaya kings, the descendants of King Vītahavya. During the reign of Haihaya King Kritavīrya, Bhrigus had to flee to another kingdom. Jamadagni II, the grandson of Āpnuvāna, married Reṇukā, daughter of King Renu, who was the contemporary of Rishi Agastya. Jamadagni had five sons, Rumaṇvān, Suṣeṇa, Vasu, Viśvāvasu and Paraśurāma.[42] King Chitraratha of Mrittikāvatī kingdom was the contemporary of Jamadagni II. King Kritavīrya's son was Arjuna Kārtavīrya, also known as Sahasrabāhu. Arjuna Kārtavīrya's sons killed Jamadagni II. Angered, Paraśurāma killed all of them except the five sons of Arjuna Kārtavīrya. Thereafter, Paraśurāma migrated southwards. Most probably, Vena and Prithu II were the descendants of Bhrigu Rishi and contemporaries of Paraśurāma. Rigveda refers to Vena, Prithu and Rāma. One Vena Bhargava was the author of a hymn of Rigveda.[43] Rāma Jāmadagnya authored the 110th Sūkta of the tenth Mandala of Rigveda. One mantra of Rigveda mentions Vena, Duḥśīma Prithu and Rāma.[44] So, Rāma mentioned in Rigveda was Paraśurāma, the son of Jamadagni II.

Śunaḥśepa was the son of Ajīgarta Āṅgirasa. Jamadagni and Ajīgarta were contemporaries of King Hariśchandra (11250 BCE). Arjuna Kārtavīrya (11200 BCE) was also contemporary of King Hariśchandra. Rishi Viśvāmitra had adopted Śunaḥśepa.

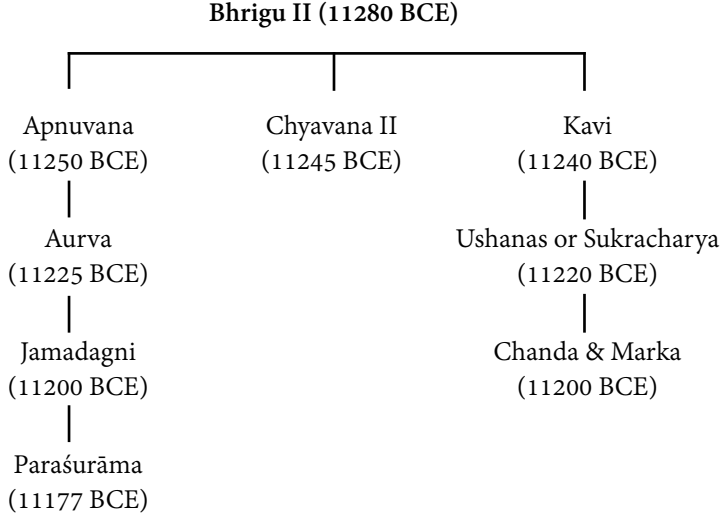
Vayu Purāṇa says that Śiva took Kavi as his son.[45] Śiva wanted to punish Uśanas or Śukrāchārya, the son of Kavi but Umā saved him. Later, Śukrāchārya became the guru of Asuras. Śukrāchārya married Go, a Pitri-kanyā (descendant of Pitri clan). He had four sons, Tvaṣṭā II, Varūthi, Chanḍa and Marka. There was another Tvaṣṭā I of Ādityas before Chyavana I (13600 BCE), who was the father of Viśvarūpa and Viśvakarmā

I. Varūthi and his descendants became the gurus of Daityas. Chanḍa and Marka were the famous teachers of Prahlāda, son of Hiraṇyakaśipu. Śukrāchārya had a daughter, Devayāni, from his second wife Jayantī. King Yayāti married Devayāni.

King Vītahavya was a Kśatriya Brāhmaṇa. Most probably, Bhrigu Rishi, the father of Chyavana I, saved him. Thus, Vītahavya (13650 BCE) became a Bhrigu Brāhmaṇa and handed over the reins of the kingdom to his son Śaryāti. Gritsamada I (13600 BCE) was probably the younger son of Vītahavya who became a Rishi of Bhrigu lineage. The Mahābhārata gives the genealogy of Gritsamada I and indicates that Gritsamada I was the progenitor of Śaunakas. Matsya Purāṇa gives the following list of Rishis who were born in Bhrigu family:[46]

"Bhrigu, Chyavana, Āpnuvāna, Aurva, Jamadagni, Gritsamada, Sanaka, Bida, Paulastya, Baijabhrit, Rishi, Kāyani, Śākaṭāyana, Grāmyāyani, Katāyani, Āpastambi, Bilvi, Naikaśi, Kapi, Ārṣṭhiṣeṇa, Rupi, Yāska, Mathita, Jaivantyāyani, Mauñja, Pili, Chali, Bhagila, Bhāgavitti, Kauśapi, Kāśyapi, Balapi, Saura, Tithi, Śramadagepi, Gārgīya, Jābāli, Pauṣṇāyana, Rāmoda, Raivasa, Vaivasa, Śālāyani, Śākaṭākśa, Maitreya, Khāṅdava, Drauṇāyana, Rakumāyani, Apiśi, Apikāyani, Hamsajihva, Vadhrāśva, Divodāsa, Ekāyana, Yajñapati, Matsyagandha, Pratyaha, Sauri, Aukśi, Kārdamāyani, Vātsya, Dandi, Nādāyana, Vaigayana, Vītahavya, Paila, Śaunaka, Śaunakāyana, Karṣaṇi, Vaihīnari, Nīla, Lubdha, Sāvarṇika, Vishnu, Paura, Balaki, Ailika, Mriga, Mārgeya, Mārkanḍa, Manda, Mānḍavya, Manḍūka, Phenapa, Stanita, Sthalapinda, Śikavarṇa, Śarkarākśī, Jaladhi, Saudhika, Kśubhya, Kutsa, Maudgalāyana, Mankāyana, Devapati, Pandurochi, Gālava, Sānkritya, Chataki, Sarpi, Yagña, Pindāyana, Gārgyāyana, Gayana, Garhāyana, Goṣṭhāyana, Vahyāyana, Vaiśampāyana, Vaikarnini, Śārngarava, Yajñeyi, Bhrashtakayani, Lālāti, Nākuli, Laukśinya, Uparimandala, Aluki, Sauchaki, Kautsa, Paingalāyani, Sātyāyani, Mālāyani, Kautili, Kauchahastika, Sauha, Sokti, Kauvakśi, Kausi, Chāndramasi, Naikajivha, Jivhaka, Vyādhajya, Lauhavairi, Śāradvati, Netishya, Lolākśi, Chalakundala, Vāngayani, Anumati and Purnimagatika."

Matsya Purāṇa mentions that nineteen Bhārgavas – Bhrigu, Kāśyapa, Prachetā, Dadhīcha, Āpnuvāna or Ātmāvan, Urṣa, Jamadagni, Veda,

Sārasvata, Ārṣṭiṣeṇa, Chyavana Vītahavya, Savedhasa, Vainya, Prithu, Dividāsa, Brahmavān, Gritsamada and Śaunaka – were the authors of Veda Mantras (hymns).[47] Vāyu Purāṇa gives similar list of eighteen Bhārgavas. The genealogy of later Bhārgavas:

Aṅgiras

Aṅgiras was also the Mānasaputra of Brahma I, the first Rishi, and the contemporary of Svāyambhuva Manu. Brihaspati I of Āṅgirasa gotra lived around 14000 BCE. Purāṇas give the detailed genealogy of Āṅgirasa family from Atharva Āṅgirasa II (13550 BCE). Brahmānda Purāṇa gives the genealogical account of Rishi Atharva Āṅgirasa.[48] Atharva had three wives: Surūpā (daughter of Rishi Marīchi), Svarāt (daughter of Rishi Kardama) and Pathyā (a descendant of Manu dynasty). Brihaspati II was born to Surupā, and Gautama, Ajasya, Vāmadeva I, Utathya and Uśija were born to Svarāt. Dhriṣṇi, Samvarta and Mānasa were born to Pathyā. Dīrghatamas I was the son of Utathya and Mamatā. Kitava was the son of Ayāsya I. Brihaduktha was the son of Vāmadeva I. Dhriṣṇi's son was Sudhanvā. Riṣabha was the son of Sudhanvā. The Ribhus, known as Rathakāras (chariot makers), were the descendants of Sudhanvā. Bhāradwāja I was the son of Brihaspati II.

Dīrghatamas I Māmateya was blind by birth. He married Pradveśī. Rishi Gautama was born to them. Later, Dīrghatamas I had a son named Kakśīvant I from a Śūdra woman named Pajra or Auśīnarī. The descendants of Kakśīvant I went to Girivraja and became Brāhmaṇas, known as Pajra Kakśīvant and later as Kuśamanda Gautamas. Rishi Śardvān I, son of Gautama was the paternal cousin of Dīrghatamas I. Śatānanda was the son of Śardvān I and Ahalyā I, daughter of Vadhyāśva. Vadhyāśva was the son of Brahmiṣṭḥa and Indrasenā, and the grandson of Mudgala. Divodāsa was the son of Vadhyāśva. Mitrayu and Maitreya were the descendants of Divodāsa.

Brihaspati III (11220 BCE), a descendant of Aṅgirasa, was the contemporary of Uśanas or Śukrāchārya. He had a son named Kacha. Ayāsya Āṅgirasa (11250 BCE) was the contemporary of King Hariśchandra (11250 BCE). Ajīgarta, the father of Śunaḥśepa, was also an Āṅgirasa as mentioned in Aitareya Brāhmaṇa.[49] The Mahābhārata indicates that Uchathya was the contemporary of King Māndhātā, the son of Yuvanāśva (*Uchathyo Brahmavittamaḥ… Māndhātre Yauvanāśve... abhyabhāṣata*).[50] Dīrghatamas II was the son of Uchatya. He authored many hymns of the first Mandala of Rigveda. He was the first who referred to twelve harmonic divisions of a zodiac of 360 degrees, twelve solar months, 360 days and 720 days and nights. Dīrghatamas II was not blind, which is evident from the content of his hymns. He married Uśijā. Kakśīvant II was the son of Dīrghatamas II and Uśijā. There was another Brihaspati IV, a contemporary of King Māndhātā. He married off his daughter, Romaśā, to King Svanaya Bhāvayavya.

Eventually, many lineages of Aṅgirasa gotra (Ayāsya, Auchathya, Auśija, Vāmadeva, Bhāradwāja, Sānkrita, Garga, Kaṇvarathītara, Mudgala, Vishnuvriddha, Hārīta, Kapi, Rukśabharadwāja, Ārṣabha and Kitava) evolved. Seemingly, Rishi Kapi of Aṅgirasa gotra was probably the progenitor of Kapis (Vānaras) of Kishkindha of the Rāmāyaṇa era. Later, Kapi became synonymous with Vānara (monkey) in Laukika Sanskrit. Vishnuvriddha and Hārīta lineages evolved from Rajarshi Māndhātā.

Atharva III Āṅgirasa (10900 BCE) was a Bhiṣaj, i.e., an Ayurvedic physician. He married Chiti. His son was Dadhyaṅg or Dadhīchi II.

Gabhastinī married Dadhīchi II and Rishi Pippalāda was their son. There were two Dadhīchis. Dadhīchi I of the Bhrigu gotra (13650 BCE) lived in Gujarat (on the banks of Sābarmati River). Rigveda refers to Dadhīchi I in several hymns.[51] Dadhīchi II of the Āṅgirasa gotra (10870 BCE) lived in Naimiṣāraṇya, on the banks of Gomati River. Matsya Purāṇa tells us that a total of thirty-three Āṅgirasa Rishis – Āṅgirasa, Trita, Bharadwāja, Lakśmaṇa, Kritavacha, Garga, Smriti, Sankriti, Guruvīta, Māndhātā, Ambarīṣa, Yuvanāśva, Purukutsa, Svaśrava, Sadasyavan, Ajamīḍha, Asvahārya, Utkala, Kavi, Priṣadaśva, Virūpa, Kāvya, Mudgala, Uchathya, Śaradvān, Vājiśravā, Apasauṣa, Suchitti, Vāmadeva, Rishija, Brihacchukla, Dīrghatamas and Kakśīvān – were the authors of Veda Mantras.

Kaṇva (Aṅgirasa)

There were three different lineages of Kaṇvas. The earliest lineage of Kaṇvas originated from Apratiratha, the son of Rantināva of the Puru dynasty. King Kaṇva was the son of Puru king Apratiratha. Medhātithi I was the son of Kaṇva. Seemingly, Kaṇva, the son of Medhātithi, was the contemporary of King Duṣyanta. The second lineage of Kaṇvas originated from King Ajamīḍha, the great grandson of King Bharata (13450 BCE). Ajamīḍha's son was Kaṇva II. Medhātithi II was the son of Kaṇva II. Kānvāyanas were the descendants of Medhātithi II. Kānvāyanas were Kśatriyas and occupied the kingdom of Gādhipura or Kānyakubja. Jahnu, a son of Ajamīḍha II of the Kuru dynasty, became the king of the Kānyakubja kingdom. Most probably, ancient Kāṇvāyanas were the progenitors of the Kaṇva dynasty of Magadha.

The third lineage of Kaṇvas originated from Ghora Āṅgirasa, who was the Guru of Vāsudeva Devakīputra Krishna. Pragātha Ghaura Kaṇva was the son of Ghora Āṅgirasa (11150 BCE).

Sobhari Kaṇva was a junior contemporary of King Māndhātā. Priyamedha was the descendant of Ajamīḍha II.[52] Priṣadhra Kaṇva, Praskaṇva, Devātithi Kaṇva, Vatsa Kaṇva, Sadhvamsa Kaṇva, and Medhātithi II Kaṇva, were the later Kaṇvas. Parvata Kaṇva and Nārada Kaṇva (11200 BCE) were the contemporaries of King Yudhāśrauṣṭi, the son of Ugrasena, Kuru King Somaka, the son of Sahadeva, Sahadeva,

the son of Sriñjaya, Babhru, the son of Devavridha, Bhima, the son of Vidarbha, and Nagnajit, the son of Gāndhāra.

Gautama (Āṅgirasa) and Vāmadeva (Āṅgirasa)

Gotama I was the son of Atharva Āṅgirasa (13550 BCE). Rishi Śaradvān Gautama I married Ahalyā I. Vāmadeva I (13500 BCE) was the brother of Gotama. The Mahābhārata mentions that Vāmadeva II was the contemporary of King Vasumanā Kauśalya.[53] Vāmadeva III (11200 BCE) was the contemporary of King Somaka Sāhadevya, King Śala and Dala. Vāmadeva Gautama (11170 BCE) was the descendant of Vāmadeva III. Brihaduktha (11150 BCE) was the son of Vāmadeva Gautama. Aitareya and Śatapatha Brāhamaṇas mention that Brihaduktha consecrated King Durmukha Pāñchāla.[54]

Bharadwāja (Āṅgirasa)

Bharadwāja was the son of Brihaspati II (13520 BCE) and the grandson of Atharva Āṅgirasa (13550 BCE). Pāyu Bharadwāja (11350 BCE) was the contemporary of King Prastoka Sārñjaya, King Abhyāvartin Chāyamāna and King Divodāsa. Bharadwāja II was the son of Śaṁyu Brihaspati. King Bharata II adopted Bharadwāja II. Later, Bharadwāja II became the Purohita of King Divodāsa of Kāshi. His son was Vidatha I. Vidatha I had five sons, Suhotra, Śunahotra, Nara, Garga and Rijiśvān.

Atri

Atri I was also the Mānasaputra of Brahma I and a contemporary of Svāyambhuva Manu. Kūrma Purāṇa mentions that Agni was the son of Atri I. Atri II lived around 14000 BCE and married Anasūyā. Their son was Soma I. He abducted Tārā, wife of Brihaspati I. Soma I had a son, Budha I. Budha's son Puru I (13950 BCE) founded the early Paurava dynasty. Atri III or Ātreya, also known as Prabhākara, married ten daughters of Raudrāśva (Bhadrāśva or Kriṣāśva). Raudrāśva (13625-13600 BCE) married Apsarā Ghritāchī. Prabhākara had ten sons called the Svastyātreyas. Durvāsa was the son of Svastyātreya. Rishi Durvāsa, a senior contemporary of King Duṣyanta, visited the Ashrama of Kaṇva. Ātreya Rishis were the contemporaries of Tryāruṇa, Trasadasyu and Aśvamedha.

There was another Rishi Ātreya (Atri IV), a descendant of Svastyātreyas, around 11300 BCE. He had three sons, Durvāsa, Datta Ātreya and Chandra (Soma II). Chandra (Soma II) married the daughters of Dakśa Prajāpati. He was the founder of Chandra Vaṁśa. His son Budha married Ilā, daughter of Rishi Kaśyapa. Purūravā was the son of Budha and Ilā and also the founder of Aila dynasty. Archanānas, Śyāvāśva and Gaviṣṭhira belonged to the lineage of Datta Ātreya. Babhru Ātreya was the contemporary of King Rinañchaya. Another Ātreya was also the contemporary of King Rauṣma. Matsya Purāṇa informs us that Atri, Ardhasvana (Archanānas ?), Śyāvāśva, Gaviṣṭhira, Karnaka and Pūrvātithi were the authors of Veda Mantras.

Marīchi and Kaśyapa

Marīchi I was the Mānasaputra of Brahma I and a contemporary of Svāyambhuva Manu. Prajāpati Ariṣṭanemi was the son of Marīchi I. Marīchi II was the father of Rishi Kaśyapa I (14050 BCE). Ādityas were born to Kaśyapa I and his wife Aditi. Kaśyapa II was the father of Surūpā. Atharva Āṅgirasa (13550 BCE) married Surūpā. Kaśyapa II had two sons, Vatsara and Asita. Vatsara was probably a great astronomer, thus, Vatsara became synonymous with a year (Saṁvatsara, Parivatsara etc.). Vatsara had two sons, Nidhruva and Raibhya. Nidhruva married Sumedhā, daughter of Rishi Chyavana I and Sukanyā. Nidhruva was the progenitor of Kunḍapāyins. Asita's wife was Ekaparṇā. Devala was the son of Asita. Rishi Devala was the progenitor of Śānḍilyas.

Marichi III was the father of Rishi Kaśyapa III (11300 BCE). He married Aditi II (mother of Ādityas or Devas), Diti (mother of Daityas like Hiraṅyakaśipu), Kadru, Danu (mother of Dānavas), Ariṣtā, Surasā, Surabhi, Vinatā (mother of Vainateyas or Garudas), Tāmrā, Krodhavaśā, Irā (mother of Airas), Viśvā and Muni, and the thirteen daughters of Dakśa Prajāpati (11300 BCE). He was the father of Vivasvān and the grandfather of Vaivasvata Manu. Kaśyapa II was also the teacher of Rāma Jāmadagnya or Paraśurāma. Most probably, Vibhānḍaka was the grandson of Kaśyapa II. Riṣyaśriṅga was the son of Vibhānḍaka and Urvaśī. Riṣyaśriṅga was the contemporary of King Lomapāda of Aṅga Kingdom. Śānḍilyas were the successors of Kaśyapa lineage in the later Rigvedic period.

Nārada

There were many Nāradas. Nārada I was the son of Brahma II. Nārada II was the son of Dakśa Prajāpati. Nārada III was the son of Kaśyapa, while Nārada IV and Parvata belonged to the Kaṇva family.

Vasiṣṭha

Vasiṣṭha I was also the Mānasaputra of Brahma I and contemporary of Svāyambhuva Manu. The descendants of Vasiṣṭha were the traditional priests of the kings of Ayodhyā. Vasiṣṭha II (also known as Devarāja) was the contemporary of Ayodhyā King Tryāruna and his son Satyavrata Triśaṅku. He married Arundhatī, daughter of Kardama Rishi. During the reign of King Triśaṅku, Vasiṣṭha and Viśvāmitra became bitter rivals. It appears that Vasiṣṭha was following Brahma, or Paitāmaha Siddhanta, considering Dhaniṣṭhā as the first Nakśatra. Viśvāmitra proved it wrong and propounded that Śravaṇa must be the first Nakśatra. The summer solstice was at Śravaṇa around 13500 BCE. King Triśaṅku appointed Viśvāmitra as his priest in place of Vasiṣṭha. Vasiṣṭha was deeply hurt and determined to do more research on the subject. Finally, Vasiṣṭha discovered the importance of the beginning of New Year from the equinox instead of the solstice. He founded his Siddhānta of beginning of New Year from Śarad Ritu or autumnal equinox. During his times, the autumnal equinox was at Aśvinī Nakśatra. Vasiṣṭha resumed his priesthood during the reign of King Hariśchandra, the son of Triśaṅku.

The descendants of Vasiṣṭha were also generally known as Vasiṣṭhas. Therefore, we have no information about the genealogy of Vasiṣṭhas before Vaivasvata Manvantara. Āpava Vasiṣṭha was the contemporary of Haihaya King Arjuna Kārtavīrya. Arjuna Kārtavīrya killed the sons of Āpava Vasiṣṭha and also burnt his Ashrama. Most probably, Āpava Vasiṣṭha adopted a son of Varuṇa who came to be known as Vasiṣṭha Vāruṇi. Ayodhyā King Kalmāṣapāda, son of Sudāsa Paijavana, was the contemporary of Vasiṣṭha Vāruṇi. Śakti was the son of Vasiṣṭha Vāruṇi. Saudāsa Kalmāṣapāda killed 100 sons of Vasiṣṭha, including Śakti. Parāśara I was the son of Śakti and Adriśyantī. Later, Kalmāṣapāda reconciled his differences with Vasiṣṭha Vāruṇi and requested Vasiṣṭha for a son from his queen. Thus, Vasiṣṭha begot a son named Aśmaka from Kalmāṣapāda's

queen Madayantī. Aśmaka migrated south and founded his kingdom, which came to known as Aśmaka janapada.

Parāśara's wife was Kāli. Their son was Veda Vyāsa I, also known as Krishna Dvaipāyana. Vyasa I married Araṇī. Their son was Śuka II, also known as Kārṣṇi, Vaiyāsaki and Araṇeya. Śukāchārya married Pitri-kanyā Pīvarī. They had five sons: Bhūriśravā, Prabhu, Śambhu, Krishna and Ghora. Most likely, there was another Śuka (Śuka I) who had one daughter, Kīrtimatī. King Anūha married Kīrtimatī. King Brahmadatta II was the son of Kīrtimatī. Seemingly, Śakti had another son named Gauriviti. Indrapramati was probably the descendant of Gauriviti. Indrapramati married Prithu's daughter and had a son called Vasu or Bharadvasu. Vasiṣṭha Maitrāvaruṇi was the successor of Vasu. Kunḍina was the son of Vasiṣṭha Maitrāvaruṇi. Matsya Purāṇa states that Vasiṣṭha, Śakti, Parāśara, Indrapramati, Bharadvasu, Vasiṣṭha Maitrāvaruṇi and Kunḍina were the seven Brahmavādins. Kunḍina was the progenitor of Kaunḍinyas. Jātūkarṇya was also a later gotra of Vasiṣṭha.

Viśvāmitra

Viśvāmitra I (also known as Viśvaratha), son of Gādhi, was the king of Gādhipura or Kānyakubja. He renounced the throne and became a Brāhmaṇa. Indra I and his descendants had a special status in society. Indra I did penance and performed 100 Yajñas. Therefore, Indra was called "Śatakratu". Seemingly, Viśvāmitra's penance threatened the status of Indra. Indra asked Menakā to seduce Viśvāmitra I. Śakuntalā was born to Viśvāmitra and Menakā.

Viśvāmitra II was the contemporary of Divodāsa, the father of Pratardana. He had three sons: Gālava, Raibhya and Iṣiratha. He also had a son named Aṣtaka, from the daughter of Yayāti of the Manu dynasty. Raibhya had two sons, Arvāvasu and Parāvasu, who were contemporaries of Paraśurāma, Bharadwāja and his son Yavakri, and a king Brihadyumna and Vasu king of Chedi. Viśvāmitra III was a contemporary of King Hariśchandra II of Ayodhyā. He had many sons, mainly Madhucchandas, Kata, Riṣabha and Reṇu etc.

Gāthin was the son of Kuśika, a descendant of the Bharata dynasty. Historians mistakenly assumed that Gādhi and Gāthin were the same person. Viśvāmitra III was the son of Gāthin. He adopted Śunaḥśepa, the son of Ajīgarta. Viśvāmitra III named him Devarāta and made him the head of Ashrama but the elder sons of Viśvāmitra III did not accept this decision. As a result, Viśvāmitra III cursed them. Aitareya Brāhmaṇa and Śāṅkhāyana Śrautasūtra mention that these cursed sons of Viśvāmitra III became the progenitors of Andhras, Pulindas and Śabaras.[55] Madhucchandas and other younger sons of Viśvāmitra III accepted Devarāta as their head.

Agastya

Agastya I (11290-11200 BCE) was one of the greatest Rishis of the later Rigvedic era. He was the contemporary of Dakśa Prajāpati and Śiva. He married Lopāmudrā, daughter of the King of Vidarbha. Lopāmudrā was the contemporary of King Alarka, grandson of the Kāshi King Pratardana. Driḍhāsya, Driḍhachyuta and Idamvaha were the sons of Agastya. According to Matsya Purāṇa, Agastya, Karambha, Kauśalyas, Śakatas, Gāndhārakāyanas, Paulastyas, Paulahas and the descendants of Kratu belonged to the clan of Agastya.[56] Interestingly, Gāndhārakāyanas or Gāndhāras (Śaka, Pahlava and Kāmboja and others), also followed Agastya. Mastya Purāṇa also mentions that Mahendra, Mayobhuva, Paurṇamāsa and Pāraṇa were the descendants of Agastya. Mahendragiri in Tirunelveli district of Tamil Nadu is named after Mahendra, a descendant of Agastya.

Pulastya

Pulastya was also a contemporary of Svāyambhuva Manu but some of his descendants came to be known as Rākśasas. Pulastya II (11280 BCE) was a junior contemporary of Dakśa Prajāpati and the disciple of Agastya. He married Ilavilā, daughter of King Triṇabindu. His son was Viśravas Ailavila. Viśravas married Devavarṇinī, daughter of Brihaspati III. They had a son, Vaiśravaṇa, also known as Kubera, who became the king or the progenitor of Yakśas. Viśravas had three more wives. Rāvaṇa I was the son of Viśravas and a junior contemporary of Kārtavīrya Arjuna. Matsya Purāṇa says that Pulastya adopted a son of Agastya.[57]

Pulaha

Pulaha I was also a contemporary of Svāyambhuva Manu. Mārkandeya Purāṇa mentions that Rishi Kardama, Arvavira and Sahiṣṇu were the descendants of Pulaha I.[58] Pulaha II was the contemporary of Agastya. Matsya Purāṇa tells us Pulaha II adopted Driḍhāsya, a son of Agastya.[59]

Kratu

Kratu I was also a contemporary of Svāyambhuva Manu. Kratu II was a contemporary of Agastya. Matsya Purāṇa says that he adopted Agastya's son Idhamvaha.[60] Mārkandeya Purāṇa mentions that Sannati married to Kratu II.[61] She gave birth to Bālakhilyas.

The Probable Dates of Rigvedic Rishis:

Based on the genealogical chronology of early Vedic rishis and kings as discussed above, the probable dates of Rigvedic rishis can be arrived at as attempted below.

Mandala 1 (191 Sūktas):

		Sūktas	In CE
1.	**Madhucchandas Vaiśvāmitra** [He was the middle son of Viśvāmitra III (11200 BCE). He refers to Śakra Indra (10.5-6) who lived around 11300 BCE.]	1-10	11175 BCE
2.	**Jetā Mādhucchandasaḥ** [Son of Madhucchandas Vaiśvāmitra]	11	11150 BCE
3.	**Medhātithi Kāṇva** [He refers to Kakśīvant Auśija (9.1). Kakśīvant was the son of Dīrghatamas Auchathya (11125 BCE). Most probably, he was the later descendant of Kaṇvas.]	12-23	11000 BCE
4.	**Śunaḥśepa Ajīgarti** [He was the contemporary of Ikśvāku King Hariśchandra (11250 BCE) and his son Rohita (11200 BCE).]	24-30	11180 BCE
5.	**Hiraṅyastūpa Āṅgirasa** [He refers to Vivasvān (31.3), Purūravā (31.4), Nahuṣa (31.11), Yayāti (31.17).]	31-35	11100 BCE

6.	**Kaṇva Ghaura** [He refers to Kaṇva Medhyātithi (36.10-11), Turvaśa, Yadu, Brihadratha, King of Aṅgas (11230 BCE) & Turviti (36.18). He was probably the son of Ghora Āṅgirasa (11150 BCE).]	36-43	11100 BCE
7.	**Praskaṇva Kaṇva** [He refers to Priyamedha, Atri, Virūpa, Āṅgiras Rishis, King Sudāsa Paijavana (11250 BCE) (47.6)]	44-50	11000 BCE
8.	**Savya Āṅgirasa** [He refers to King Atithigva Divodāsa and Asura Kings Śambara (11300 BCE) (51.6) & Namuchi (53.7). He also refers to Rijiśva (53.8), Suśravas, Turyāna, Kutsa (53.10), Narya, Yadu, Turvaśa, Turviti (54.6). Rijiśva was the son of Vidatha.]	51-57	11100 BCE
9.	**Nodhāḥ Gautama** [He refers to Asura King Śambara (11300 BCE) (59.6), King Sudāsa (11270-11230 BCE), Rishi Purukutsa (63.7). Purukutsa was the son of Māndhātā (11100 BCE).]	58-64	11000 BCE
10.	**Parāśara Śāktya** [He was the son of Śakti and the grandson of Vasiṣṭha Vāruṇi. Parāśara was a junior contemporary of Rishi Pulastya and Arjuna Kārtavīrya.]	65-73	11200 BCE
11.	**Gautama Rāhūgaṇa** [He refers to Rishi Dadhīcha, a descendant of Rishi Atharva (84.13) King Śaviṣṭha Indra (84.19), Vishnu (85.7), Ariṣṭanemi of Garudas, son of Trikśa (11250 BCE) (89.6). He also indicates the beginning of New Year from Śarad Ritu (89.9). He was the contemporary of King Videha Mādhava.]	74-93	10950 BCE
12.	**Kutsa Āṅgirasa** [Kutsa was a later descendant of Āṅgirasa gotra. He refers to Asura King Śambara (11300 BCE) (101.2), Ribhu, Vibhva & Vāja, three sons of Sudhanvā Āṅgirasa (13900 BCE), King Sudāsa Paijavana (112.19). He also refers to King Māndhātā (1.112.13). Another Kutsa, grandson of Indra was a contemporary of Ayu,	94-98 & 101-104, 106-115	11000 BCE

	the son of Purūravā as indicated by Gritsamada Bhārgava Śaunaka (2.14.7).]		
13.	**Kaśyapa Mārīcha** [He was the son of Rishi Marīchi and the father of Vivasvān.]	99	11300 BCE
14.	**Rajarshis Rijrāśva, Ambarīṣa, Sahadeva, Bhayamāna and Surādhas**, [They were the sons of Vriṣagira.]	100	11200 BCE
15.	**Trita Āpya** [Agni created Ekata, Dvita and Trita from water. Trita fell into a well while drawing water. Thus, Trita was called as the son of Āpaḥ (water).]	105	11000 BCE
16.	**Kakśīvān Dairghatamasa Auśija** [He refers to Agastya (117.11). He was the son of Dīrghatamas (11150 BCE) and Uśijā.]	116-121	11100 BCE
17.	**Kakśīvān Dairghatamasa, Svanaya Bhāvayavya and Romaśā (Rishikā)** [He refers to Nahuṣa (122.11), King Maśarśāra, Aayavasa (122.15). Probably, Romaśā was the daughter of Brihaspati IV. She married King Svanaya Bhāvayavya.]	122-126	11100 BCE
18.	**Paruccḥepa Daivodāsi** [He refers to King Atithigva Divodāsa, Asura King Śambara (130.7), Priyamedha Kaṇva (139.9). He belonged to the lineage of Divodāsa, the son of Vadhyāśva.]	127-139	10850 BCE
19.	**Dīrghatamas Auchathya** [He was also the author of Vishnu Sūkta (156). His father Uchathya was the contemporary of King Māndhātā (11150 BCE).]	140-164	11125 BCE
20.	**Rishi Indra, Marut and Agastya Maitrāvaruṇi**	165	11290 BCE
21.	**Agastya Maitrāvaruṇi** [He refers to Bharata (173.2), Purukutsa (174.2) and Gotama, Purumīdha, Atri (183.5). One Sūkta is in fact a dialogue between Indra and Agastya (170).]	166-178 180-191	11290-11200 BCE
22.	**Lopāmudrā (Rishikā)** [She was the wife of Agastya. Her sūkta indicates the beginning of New Year from autumnal equinox (179.1).]	179	11290-11200 BCE

Mandala 2 (43 Sūktas):

		Sūktas	In CE
1.	**Gritsamada Bhārgava Śaunaka** [He refers to Asura King Śambara (12.11), Kutsa, Ayu, Atithigva Divodāsa (14.7), Divodāsa (19.6), Gritsamadas (19.8). Seemingly, he was the son of King Śunahotra. He was a Kśatriya Brāhmaṇa and joined Śaunaka Bhārgavas.] The genealogy of King Śunahotra 1. Purūravā (11240 BCE) 2. Ayu (11220 BCE) 3. Nahuṣa (11200 BCE) 4. Kśatravriddha (11180 BCE) 5. Śunahotra (11150 BCE)	1-3, 8-26, 30-43	11125 BCE
2.	**Somahūti Bhārgava** [He refers to Gritsamadas (4.9) and Bharatas (7.1 & 5).]	4-7	11100 BCE
3.	**Kūrma Gārtsamada** [He was the son of Gritasamada Bhārgava.]	27-29	11100 BCE

Mandala 3 (62 Sūktas):

		Sūktas	In CE
1.	**Viśvāmitra Gāthina** [He refers to Viśvāmitras (1.21), Kuśikas (26.1), King Sudāsa Paijavana (53.11) and Saudhanvana Ribhus (60.4). He was a contemporary of King Hariśchandra (11250 BCE).]	1-12, 24-30, 32-53, 57-62	11200 BCE
2.	**Riṣabha Vaiśvāmitra** [He was the son of Viśvāmitra. Kauśika Viśvāmitras belonged to the Bharata dynasty.]	13-14	11175 BCE
3.	**Utkila Kātya** [He was the son of Kata, son of Viśvāmitra Gāthina.]	15-16	11150 BCE
4.	**Kata Vaiśvāmitra** [He was the son of Viśvāmitra.]	17-18	11175 BCE

5.	**Gāthi Kauśika** [He was the son of Kuśika and the father of Viśvāmitra Gāthina. Most probably, Kuśika was born in the Bharata dynasty.] The genealogy: 1. Kuśika 2. Gāthi 3. Viśvāmitra 4. Madhucchandas, Riṣabha & Kata 5. Utkila	19-22	11225 BCE
6.	**Devaśravā & Devavāta** [Both were the kings of Bharata dynasty. Devavāta was the father of Sriñjaya and the grandfather of Divodāsa.]	23	11350 BCE
7.	**Kuśika Aiṣirathi** [He was the great grandfather of Viśvāmitra Gāthina (11200 BCE).]	31	11325 BCE
8.	**Prajāpati Vaiśvāmitra or Prajāpati Vāchya** [Most probably, he was the son of Viśvāmitra (11200 BCE).]	55-56	11175 BCE

Mandala 4 (58 Sūktas):

		Sūktas	**In CE**
1.	**Vāmadeva Gautama** [He refers to King Sriñjaya, the son of Devavāta and King Somaka, the son of Sahadeva (11200 BCE) (15.4 & 9), Dīrghatamas Māmateya (4.130), Auśija (21.6) and Rijiśva Vaidathina (16.13). He indicates the beginning of New Year from autumnal equinox (18.4).]	1-41, 45-58	11150 BCE

2.	**Rajarshi Trasadasyu Paurukutsa** [Trasadasyu was the son of Purukutsa and a senior contemporary of King Bharata (13450 BCE).]	42	13500 BCE
3.	**Rajarshis Purumīḍha and Ajamīḍha** [Sons of King Suhotra, the grandson of King Bharata.]	43-44	13350 BCE

Mandala 5 (87 Sūktas):

		Sūktas	**In CE**
1.	**King Budha Ātreya and Rishi Gaviṣṭhara Ātreya** [Budha and Gaviṣṭhara were the descendants of Rishi Atri. Budha was the son of Chandra or Soma III.]	1	11270 BCE
2.	**Kumāra Ātreya** [He refers to Rishi Śunaḥśepa (11180 BCE) (2.7).]	2	11100 BCE
3.	**Vasuśruta Ātreya** [He refers to Ilā, wife of Budha.]	3-6	11100 BCE
4.	**Isha Ātreya**	7-8	11100 BCE
5.	**Gaya Ātreya**	9-10	11100 BCE
6.	**Sutambhara Ātreya** [He refers to Vivasvān (11.3), Nahuṣa (12.6).]	11-14	11100 BCE
7.	**Dharuna Ātreya**	15	11100 BCE
8.	**Puru Ātreya** [He was the son of Budha and Ilā.]	16-17	11240 BCE
9.	**Dvita Muktavāha Ātreya** [He was a contemporary of Trita.]	18	11000 BCE
10.	**Vavri Ātreya**	19	11100 BCE
11.	**Prayasvantaḥ Ātreya**	20	11100 BCE
12.	**Śaśa Ātreya**	21	11100 BCE
13.	**Viśvasāma Ātreya**	22	11100 BCE
14.	**Dyumna Viśvacharṣaṇi Ātreya**	23	11100 BCE

15.	**Bandhu, Subandhu, Śrutabandhu, Viprabandhu and Gaupāyana or Laupāyana**	24	11000 BCE
16.	**Vasuyavas Ātreyas**	25-26	11000 BCE
17.	**Kings Traivriṣṇa Tryāruṇa, Trasadasyu Paurukutsya and Bhārata Aśvamedha** [Tryāruṇa was the father of Satyavrata Triśaṅku (13500 BCE).]	27	13550-13400 BCE
18.	**Viśvārā Ātreyi (Rishikā)** [She was the daughter of Atri and Anasuyā.]	28	11250 BCE
19.	**Gaurivīti Śāktya** [Son of Śakti. He was probably a younger brother of Parāśara.]	29	11175 BCE
20.	**Babhru Ātreya** [He was probably the son of Datta Ātreya. He received honours from King Riṇañchaya.]	30	11200 BCE
21.	**Avasyu Ātreya**	31, 75	11000 BCE
22.	**Gātu Ātreya**	32	11000 BCE
23.	**Saṁvaraṇa Prājāpatya** [He refers to King Trasadasyu Paurukutsya (33.8). Trasadasyu was the grandson of Māndhātā. He was the son of Prajāpati.)	33-34	11000 BCE
24.	**Prabhuvasu Āṅgirasa**	35-36	11000 BCE?
25.	**Bhauma Atri** [He refers to Atris (40.9), Auśija Kakśīvān (41.5), Ilā and Urvaśī (41.19). He was the son of Bhūmi.]	37-43, 76-77, 83-86	11000 BCE
26.	**Avatsāra Kāśyapa** [He was a son of Kaśyapa.]	44	11000 BCE
27.	**Sadāprina Ātreya** [He refers to Raghu (45.9). Sāyaṇa explains; *Raghuḥ Śyenaḥ* = *Laghugamanaḥ*. Thus, Raghu is an adjective of Śyena.]	45	11000 BCE
28.	**Pratikśatra Ātreya**	46	11100 BCE
29.	**Pratiratha Ātreya**	47	11100 BCE
30.	**Pratibhānu Ātreya**	48	11100 BCE
31.	**Pratiprabha Ātreya**	49	11100 BCE

32.	**Svasti Ātreya** [He was the father of Datta Ātreya, a contemporary of Arjuna Kārtavīrya.]	50-51	11290 BCE
33.	**Śyāvāśva Ātreya** [Archanānas and his son Śyāvāśva were the contemporaries of King Rathavīti Dārbhya (61.17-19). Śyāvāśva loved the daughter of King Rathavīti but the Queen of Rathavīti rejected Śyāvāśva because he was not a Rishi (author of hymns). King Taranta, Śaśiyasī, the Queen of Taranta and King Purumīḍha were also the contemporaries of Śyāvāśva. Taranta and Purumīḍha were the sons of Vidadaśva. The kingdom of Rathavīti was located on the banks of Gomati River. Śyāvāśva now determined to write hymns and authored hymns 52-61 of the 5th Mandala. King Rathavīti came along with his daughter to the hermitage of Archanānas and appologised for rejecting the offer of marriage alliance earlier. Thus, Rishi Śyāvāśva married the daughter of King Rathavīti.]	52-61, 81-82	11050 BCE
34.	**Śrutavit Ātreya**	62	11000 BCE
35.	**Archanānas Ātreya** [He was the father of Śyāvāśva.]	63-64	11050 BCE
36.	**Rātahavya Ātreya**	65-66	10950 BCE
37.	**Yajata Ātreya**	67-68	10950 BCE
38.	**Uruchakri Ātreya**	69-70	10950 BCE
39.	**Bāhuvrikta Ātreya**	71-72	10950 BCE
40.	**Paura Ātreya** [He refers to Nahuṣa (73.3).]	73-74	10900 BCE
41.	**Saptavadhri Ātreya**	78	10900 BCE
42.	**Satyaśravāḥ Ātreya**	79-80	10900 BCE
43.	**Evayāmarut Ātreya**	87	10900 BCE

Mandala 6 (75 Sūktas):

		Sūktas	In CE
1.	**Bharadwāja Bārhaspatya** [He refers to Bharadwājas (10.7), Bharata King Divodāsa (11300 BCE) (16.19 & 26.5), Śambara (18.8 & 26.5), King Abhyāvarti Chāyamāna (27.8). He was the son of Brihaspati. He also indicates the beginning of New Year from autumnal equinox (38.4). He also refers to Videha King Nami Sāpya (20.6)]	1-30, 37-43, 53-74	10700 BCE
2.	**Suhotra Bhāradwāja** [He refers to Divodāsa (31.4).]	31-32	10900 BCE
3.	**Śunahotra Bhāradwāja** [Sons of King Suhotra, the grandson of King Bharata.]	33-34	10850 BCE
4.	**Nara Bhāradwāja**	35-36	10800 BCE
5.	**Śaṁyu Bārhaspatya** [He refers to Yadu, Turvaśa (45.1).]	44-46, 48	11100 BCE
6.	**Garga Bhāradwāja** [He refers to Divodāsa Atithigva, Śambara (47.22).]	47	11200 BCE
7.	**Rijiśvā Bhāradwāja** [He was the son of Vidatha.]	49-52	11200 BCE
8.	**Pāyu Bhāradwāja** [He was the contemporary of King Abhyāvartin Chāyamāna and King Divodāsa (11325 BCE).]	75	11325 BCE

Mandala 7 (104 Sūktas):

		Sūktas	In CE
1.	**Vasiṣṭha Maitrāvaruṇi** [He refers to King Sudāsa Paijavana and Dāśarājña War (7.18, 7.33 & 7.83). He refers to Rishi Agastya. He claims himself to be the son of Urvaśī and blessed by Mitra and Varuṇa (RV 7.33 10-11).] Purāṇas give the list of seven Vasiṣṭhas:	1-100, 103-104	11150 BCE

	1. Vasiṣṭha Vāruṇi (11225 BCE) 2. Śakti (11210 BCE) (killed by Arjuna Kārtavīrya) 3. Parāśara (11200 BCE) 4. Indrapramati (11170 BCE) 5. Bharadvasu (11160BCE) 6. Vasiṣṭha Maitrāvaruṇi (11150 BCE) 7. Kuṇḍina (11125 BCE)		
2.	**Śakti Vasiṣṭha** [He was the son of Vasiṣṭha and the father of Parāśara.]	32 (26-27)	11210 BCE
3.	**Kumāra Āgneya** [He was the son of Rishi Agni.]	101-102	11100 BCE
4.	**Vasiṣṭha (Maitrāvaruṇi?)** [Most probably, these two Parjanya Sūktas were written by Vasiṣṭha, a contemporary of Viśvāmitra I. These Sūktas indicate the beginning of New Year from the rainy season and summer solstice.]	103-104	13500 BCE

Mandala 8 (103 Sūktas):

		Sūktas	**In CE**
1.	**Pragātha Ghaura Kāṇva** [He refers to Śachīpati Indra (62.8). He was probably the son of Ghora Āṅgirasa.]	1, 48, 62	11125 BCE
2.	**Medhātithi and Medhyātithi Kāṇva** [Medhātithi III and Medhyātithi were probably the sons of Pragātha Ghaura Kaṇva.]	1 (3-29), 3, 33	11000 BCE
3.	**Plāyogi Āsaṅga**	1 (30-33)	11000 BCE
4.	**Śaśvatī Āṅgirasī (Rishikā)**	1 (34)	11000 BCE
5.	**Medhātithi Kāṇva Āṅgirasa**	2,32	11000 BCE
6.	**Prayamedha Kaṇva Medhātithi** [Priyamedha was the son of Medhātithi III Kaṇva Āṅgirasa.]	2 (41-42)	10950 BCE

7.	**Devātithi Kāṇva** [He refers to Turvaśa, Yadu (4.7), Priyamedha (4.20) and Pajra Kakśīvat (4.17).]	4	11000 BCE
8.	**Brahmātithi Kāṇva**	5	11000 BCE
9.	**Vatsa Kāṇva**	6,11	11000 BCE
10.	**Punarvatsa Kāṇva**	7	11000 BCE
11.	**Sadhvaṁsa Kāṇva**	8	11000 BCE
12.	**Śaśakarṇa Kāṇva**	9	11000 BCE
13.	**Pragātha Kāṇva** [He refers to King Durgaha, the grandfather of King Purukutsa and great grandfather of King Trasadasyu (65.12). Probably, he was the son of Ghora Āṅgirasa.]	10, 63-65	11050 BCE
14. & 15.	**Parvata Kāṇva and Nārada Kāṇva** [Parvata and Nārada were probably brothers. They were the contemporaries of Yudhāśrauṣṭi, the son of Ugrasena. Aitareya Brāhmaṇa (8.21) tells us that Parvata and Nārada anointed Yudhāśrauṣṭi Augrasenya. Aitareya Brāhmaṇa (7.34) also mentions that Parvata and Nārada were the contemporaries of Kuru King Somaka, the son of Sahadeva, Sahadeva, the son of Sriñjaya, Babhru, the son of Devavridha, Bhima, the son of Vidarbha and Nagnajit, the son of Gāndhāra. There were two Babhrus in the Chandravaṁśa. Śaśabindu, a descendant of Yadu had many sons. Romapāda, a descendant of Śaśabindu, had a son named Babhru. Romapāda's brother Kratha had a descendant named Sātvata. Devavriddha was the son of Sātwata. Babhru was the son of Devavriddha.]	12-13	11200 BCE
16.	**Gośukti Kāṇvāyana and Aśvaśukti Kāṇvāyana** [They belonged to the lineage of Kāṇvāyanas.]	14-15	11000 BCE
17.	**Iriṁbiṣṭhi Kāṇva**	16-18	10900 BCE

18.	**Sobhari Kāṇva** [He refers to King Trasadasyu Paurukutsya, grandson of Māndhātā (19.36-37). He married to the daughters of King Māndhātā.]	19-22, 103	11125 BCE
19.	**Viśvamanā Vaiyaśva**	23-26	11000 BCE
20.	**Manu Vaivasvata** [He was the son of Vivasvān.]	27-31	11275 BCE
21.	**Nīpātithi Kāṇva**	34	11100 BCE
22.	**Śyāvāśva Ātreya** [He also wrote Sūktas of the 5th Mandala.]	35-38	11000 BCE
23.	**Nābhāka Kāṇva**	39-42	11100 BCE
24.	**Virūpa Āṅgirasa**	43-44	11000 BCE
25.	**Triśoka Kāṇva**	45	11000 BCE
26.	**Vaśa Aśvya**	46	11000 BCE
27.	**Trita Āptya** [He also wrote Sūktas of the 1st Mandala.]	47	11150 BCE
28.	**Bālakhilya Sūktas** [Hymns 49-59 are attributed to Bālakhilyas. Mārkandeya Purāṇa relates that Bālakhilyas were the sons of Rishi Kratu and Sannati.]		
29.	**Praskaṇva Kāṇva**	49	11200-10900 BCE
30.	**Puṣṭigu Kāṇva**	50	
31.	**Śruṣṭigu Kāṇva**	51	
32.	**Āyu Kāṇva**	52	
33.	**Medhya Kāṇva**	53	
34.	**Mātariśvā Kāṇva**	54	
35.	**Kriśa Kāṇva**	55	
36.	**Priṣadhra Kāṇva**	56	
37.	**Medhya Kāṇva**	57-58	
38.	**Suparṇa Kāṇva**	59	
39.	**Bharga Prāgātha** [He was a descendant of Pragātha.]	60-61	10900 BCE
40.	**Kali Prāgātha** [He was a descendant of Pragātha.]	66	10900 BCE

41.	**Matsya Sāmmada, Mānya Maitrāvaruṇi and Many Matsyas** [Matsyas were the neighbours of Manu kingdom. King or Rishi Matsya saved Manu Vaivasvata during the great flood (11200 BCE). It is stated that Matsya was also born by the blessings of Mitra and Varuṇa. Matsya Kingdom came to be known as Matsya janapada.]	67	11200-11000 BCE
42.	**Priyamedha Āṅgirasa**	68-69	11000 BCE
43.	**Purihanmā Āṅgirasa**	70	11000 BCE
44.	**Sudīti Āṅgirasa and Purumīḍha Āṅgirasa** [Most probably, Purumīḍha was a Kśatriya Brāhmaṇa. King Purumīḍha was a senior contemporary of Śyāvāśva Ātreya.]	71	11000 BCE
45.	**Haryata Prāgātha**	72	10900 BCE
46.	**Gopavana Ātreya**	73-74	10900 BCE
47.	**Virūpa Āṅgirasa**	75	11000 BCE
48.	**Kurusuti Kāṇva**	76-78	11000 BCE
49.	**Kritnu Bhārgava**	79	10900 BCE
50.	**Ekadyū Naudhasa** [Probably, son of Nodhā Gautama.]	80	10900 BCE
51.	**Kusīdī Kāṇva**	81-83	10900 BCE
52.	**Uśanā Kāvya** [He was the famous Śukrāchārya, the son of Kavi.]	84	11200 BCE
53.	**Krishna Āṅgirasa**	85, 87	11100 BCE
54.	**Krishna Viśvaka Kārṣṇi** [Kārśṇi was another name of Śukrāchārya. Probably, Krishna Viśvaka was the son of Śukrāchārya.]	86	11100 BCE
55.	**Nodhā Gautama**	88	11100 BCE
56.	**Nrimedha Āṅgirasa and Purumedha Āṅgirasa** [Probably, both were contemporaries.]	89-90	11000 BCE

57.	**Apālā Ātreyi (Rishikā)** [She was the daughter of an Atri Rishi. She refers to Rishikā Romaśā (91.6) (11050 BCE).]	91	11000 BCE
58.	**Śrutakakśa Āṅgirasa**	92	10900 BCE
59.	**Sukakśa Āṅgirasa**	93	10900 BCE
60.	**Vindu or Pūtakakśa Āṅgirasa**	94	10900 BCE
61.	**Tiraśchī Āṅgirasa**	95-96	11000 BCE
62.	**Rebha Kāśyapa** [He was the son of Kāśyapa.]	97	11260 BCE
63.	**Nrimedha Āṅgirasa**	98-99	11100 BCE
64.	**Nema Bhārgava**	100	11100 BCE
65.	**Jamadagni Bhārgava** [He was the father of Paraśurāma and the contemporary of Arjuna Kārtavīrya (11200 BCE).]	101	11200 BCE
66.	**Bhārgava**	102	11225 BCE

Mandala 9 (114 Sūktas):

		Sūktas	**In CE**
1.	**Madhucchandas Vaiśvāmitra** [He was the middle son of Viśvāmitra and the contemporary of Śunaḥśepa.]	1	11180 BCE
2.	**Medhātithi Kāṇva**	2	11000 BCE
3.	**Śunaḥśepa Ajīgarti** [A junior contemporary of King Hariśchandra.]	3	11180 BCE
4.	**Hiraṇyastūpa Āṅgirasa**	4, 69	11250 BCE
5.	**Asita Kāśyapa or Devala** [Asita and Devala were the grandsons of Kāśyapa Rishi. They refer to Rebha Kaśyapa (7.6).]	5-24	11200 BCE
6.	**Driḍhachyuta Agastya** [He was the son of Agastya.]	25	11225 BCE
7.	**Idhmavāha Dārḍhachyuta** [He was the son of Driḍhachyuta and the grandson of Agastya.]	26	11200 BCE

8.	**Nrimedha Āṅgirasa**	27, 29	11100 BCE
9.	**Priyamedha Āṅgirasa**	28	11000 BCE
10.	**Bindu Āṅgirasa**	30	11100 BCE
11.	**Rāhūgaṇa Gautama**	31, 37-38	10900 BCE
12.	**Śyāvāśva Ātreya**	32	11000 BCE
13.	**Trita Āptya**	33-34	11150 BCE
14.	**Prabhūvasu Āṅgirasa**	35-36	11000 BCE
15.	**Brihanmati Āṅgirasa**	39-40	11000 BCE
16.	**Medhyātithi Kāṇva**	41-43	11000 BCE
17.	**Ayāsya Āṅgirasa** [He was the contemporary of King Hariśchandra and Śunaḥśepa.]	44-46	11250 BCE
18.	**Kavi Bhārgava** [He was the father of Śukrāchārya.]	47-49, 75-79	11225 BCE
19.	**Uchathya Āṅgirasa** [He was the father of Dīrghatamas II and the contemporary of King Māndhātā.]	50-52	11150 BCE
20.	**Avatsāra Kāśyapa**	53-60	11000 BCE
21.	**Amahīyu Āṅgirasa**	61	10900 BCE
22.	**Jamadagni Bhārgava** [He was the father of Paraśurāma.]	62	11200 BCE
23.	**Nidhruvi Kāśyapa**	63	11150 BCE
24.	**Māricha Kāśyapa** [He was the father of Rishi Kaśyapa.]	64, 91-92	11325 BCE
25.	**Vāruni Bhrigu**	65	11200 BCE
26.	**Śatam Vaikhānasa**	66	11200 BCE
27.	**Bharadwāja Bārhaspatya, Kaśyapa Mārīcha, Gotama Rāhūgaṇa, Atri Bhauma, Gāthina Viśvāmitra, Jamadagni Bhārgava, Vasiṣṭha Maitrāvaruṇi, Pavitra Āṅgirasa**	67	11200-10900 BCE
28.	**Vatsapri Bhālandana** [He was the son of Bhālandana and the grandson of Nābhāga Manu]	68	11150 BCE

29.	**Reṇu Vaiśvāmitra** [He was a son of Viśvāmitra.]	70	11175 BCE
30.	**Riṣabha Vaiśvāmitra** [He was a son of Viśvāmitra.]	71	11175 BCE
31.	**Harimanta Āṅgirasa**	72	11000 BCE
32.	**Pavitra Āṅgirasa**	73, 83	11000 BCE
33.	**Kakśīvān Dairghatamasa**	74	11000 BCE
34.	**Vasu Bhāradwāja**	80-82	11000 BCE
35.	**Prajāpati Vāchya**	84	11000 BCE
36.	**Vena Bhārgava** [A senior contemporary of Paraśurāma.]	85	11200 BCE
37.	**Akriṣṭāḥ Māṣāḥ**	86 (1-10)	10900 BCE
38.	**Sikatā Nivāvarī (Rishikā)**	86 (11-20)	10900 BCE
39.	**Priśnya Aja**	86 (21-30)	
40.	**Uśanā Kāvya** [Śukrāchārya]	87-89	11200 BCE
41.	**Vasiṣṭha Maitrāvaruṇi**	90	11150 BCE
42.	**Nodhā Gautama**	93	10900 BCE
43.	**Kaṇva Āṅgirasa**	94	11200 BCE
44.	**Praskaṇva Āṅgirasa**	95	11175 BCE
45.	**Pratardana Daivodāsi**	96	11325 BCE
46.	**Vasiṣṭhas - Maitrāvaruṇi, Indrapramati, Vriṣagaṇa, Manyu, Upamanyu, Vyāghrapāt, Śakti, Karnaśrut, Mridīka, Vasukra, Parāśara and Kutsa**	97	11200 BCE
47.	**Ambarīṣa Vārṣagira and Rijiśvā Bhāradwāja**	98	11200 BCE
48.	**Two sons of Rebha Kāśyapa**	99-100	11200 BCE
49.	**Andhīgu Śyāvāśvi** [He was the son of Śyāvāśva Ātreya.]	101 (1-3)	11000 BCE
50.	**Yayāti Nāhuṣa**	101 (4-6)	11325 BCE
51.	**Nahuṣa Mānava**	101 (7-9)	11350 BCE
52.	**Manu Sāṁvaraṇa**	101 (10-12)	11200 BCE

53.	**Vāchya Vaiśvāmitra**	101 (13-16)	11100 BCE
54.	**Trita Āptya**	102	11150 BCE
55.	**Dvita Āptya**	103	11150 BCE
56.	**Parvata and Nārada Kaṇvas**	104-105	11200 BCE
57.	**Agni Chākśuṣa** [He belonged to the lineage of Sūrya. Sūrya's son was Chakśu. Agni was the son of Chakśu.]	106	11150 BCE
58.	**Saptarṣis**	107	11250-10800 BCE
59.	**Gaurivīti Śāktya, Śakti Vāsiṣṭha, Uru Āṅgirasa, Rijiśvā Āṅgirasa, Urdhvasadmā Āṅgirasa, Kritayaśāḥ Āṅgirasa, Rājarshi Riṇañchaya**	108	11200-11000 BCE
60.	**Agni Dhiṣṇya Aiśvara**	109	11000 BCE
61.	**Kings Tryāruṇa and Trasadasyu**	110	13550 BCE
62.	**Anānata Pārucchepi** [He was a son of Parucchepa Daivodāsi.]	111	10820 BCE
63.	**Śiśu Āṅgirasa**	112	10900 BCE
64.	**Kaśyapa Mārīcha** [He was the father of Vivasvān and the grandfather of Vaivasvata Manu.]	113-114	11300 BCE

Mandala 10 (191 Sūktas):

		Sūktas	**In CE**
1.	**Trita Āptya**	1-7	11150 BCE
2.	**Tvāṣṭra Triśira** [A contemporary of King Māndhātā.]	8	11090 BCE
3.	**Sindhudvīpa Āmbarīṣa** [Sindhudvīpa was the son of King Ambarīṣa.]	9 (1-4,6)	11200 BCE
4.	**Yama Vaivasvata and Yami Vaivasvatī** [A dialogue between Yama and his sister Yami. Yama was the son of King Vivasvān.	10	11250 BCE

	Viśvakarmā II, son of Bhuvana was the contemporary of Yama. He built the palace of Yama.]		
5.	**Āṅgi Havirdhāna** [He was a son of Aṅga Rishi. He refers to Dhumaketu or comet (12.2).]	11-12	11000 BCE
6.	**Vivasvān Āditya**	13	11290 BCE
7.	**Yama Vaivasvata** [Son of Vivasvān.]	14	11250 BCE
8.	**Śankha Yāmāyana** [Grandson of Yama.]	15	11175 BCE
9.	**Damana Yāmāyana** [Grandson of Yama.]	16	11175 BCE
10.	**Devaśravā Yāmāyana** [Grandson of Yama.]	17	11175 BCE
11.	**Saṁkusuka Yāmāyana** [Grandson of Yama.]	18	11175 BCE
12.	**Mathita Yāmāyana** [Grandson of Yama.]	19	11175 BCE
13.	**Vimada Aindra** [He was the son of Rishi Indra. Indra was the disciple of Prajāpati and the contemporary of Virochana. He was the first who formulated the sūtras of Aindra Vyākaraṇa.]	20-26	11150 BCE
14.	**Vasukra Aindra** [Son of Rishi Indra.]	27,29	11150 BCE
15.	**The wife of Vasukra and daughter-in-law of Indra (Rishika)**	28 (1)	11150 BCE
16.	**Kavaṣa Ailūṣa** [He was the contemporary of King Kuruśravaṇa (13450 BCE), son of Trasadasyu.]	30-34	13450 BCE
17.	**Luśa Dhānāka** [Son of Dhanāka.]	35-36	11000 BCE
18.	**Abhitapaa Saurya**	37	11100 BCE
19.	**Muṣkavān Indra**	38	11150 BCE
20.	**Ghoṣā Kakśīvatī (Rishikā)** [She was the daughter of Kakśīvant and the granddaughter of Dīrghatamas II.]	39-40	11050 BCE
21.	**Ghoṣeya Suhastya** [He was the son of Ghoṣā Kakśīvatī and Suhasti.]	41	11000 BCE
22.	**Krishna Āṅgirasa**	42-44	11100 BCE

23.	**Vatsapri Bhālandana**	45-46	11800 BCE
24.	**Saptagu Āṅgirasa** [He was a junior contemporary of Rajarshi Vaikuṇṭha Indra. He dedicated his sūkta to Vaikuṇṭha Indra.]	47	10600 BCE
25.	**Vaikuṇṭha Indra** [He refers to Kings Atithigva, Nahuṣa, Videha King Nami Sāpya..]	48-50	10600 BCE
26.	**Sauchīka Agni**	51-53, 79-80	11200 BCE
27.	**Brihaduktha Vāmadevya** [Son of Vāmadeva III.]	54-56	11150 BCE
28.	**Bandhu, Śrutabandhu, Viprabandhu and Gaupāyana** [He refers to Bhajeratha (60.2).]	57-60	10800 BCE
29.	**Nābhā Nediṣṭha Mānava** [Son of Vaivasvata Manu.]	61-62	11225 BCE
30.	**Gaya Plāta**	63-64	11000 BCE
31.	**Vāsukra Vasukarṇa**	65-66	11000 BCE
32.	**Ayāsya Āṅgirasa**	67-68	11250 BCE
33.	**Sumitra Vādhrāśva**	69-70	11100 BCE
34.	**Brihaspati Āṅgirasa**	71	11200 BCE
35.	**Laukya Brihaspati, Aditi Dākśāyaṇī (Rishikā)**	72	11200 BCE
36.	**Gaurivīti Śāktya** [Son of Śakti.]	73-74	11175 BCE
37.	**Sindhukśit Praiyamedha**	75	11000 BCE
38.	**Sarpa Airāvata Jaratkarṇa** [Most probably, Sarpa belonged to the lineage of Nāgas.]	76	11250 BCE
39.	**Syūmaraśmi Bhārgava**	77-78	11000 BCE
40.	**Viśvakarmā Bhauvana** [A contemporary of Yama Vaivasvata.]	81-82	11225 BCE
41.	**Manyu Tāpasa**	83-84	11200 BCE
42.	**Sāvitrī Suryā (Rishikā)** [Daughter of Sūrya. Her sister Tāpatī married King Saṁvaraṇa.]	85	11430 BCE
43.	**Indra and Indrāṇī (Rishikā)**	86	11150 BCE

44.	**Vriṣākapi Aindra**	86 (7,13,23)	11100 BCE
45.	**Pāyu Bhāradwāja**	87	11325 BCE
46.	**Mūrdhanvan Āṅgirasa**	88	11000 BCE
47.	**Reṇu Vaiśvāmitra**	89	11175 BCE
48.	**Nārāyaṇa**	90	11200 BCE
49.	**Aruṇa Vaitahavya**	91	11200 BCE
50.	**Śāryāta Mānava** [Son of Śaryāti and grandson of Vaivasvata Manu.]	92	11200 BCE
51.	**Tānva Pārthya**	93	10900 BCE
52.	**Arbuda Kādraveya** [Son of Kadru, wife of Kaśyapa. Kadru was the mother of Nāgas.]	94	11250 BCE
53.	**Aila Purūravā and Urvaśī (Rishikā)**	95	11240 BCE
54.	**Baru Āṅgirasa**	96	11000 BCE
55.	**Ātharvaṇa Bhiṣak** [He was probably the father of Dadhīchi II.]	97	10850 BCE
56.	**Ārṣṭiṣeṇa Devāpi**	98	11150 BCE
57.	**Vamra Vaikhānasa**	99	11100 BCE
58.	**Duvasyu Vāndana**	100	10900 BCE
59.	**Budha Saumya** [Son of Soma II and father of Purūravā.]	101	11250 BCE
60.	**Mudgala Bhārmyaśva**	102	11100 BCE
61.	**Apratiratha Aindra** [He was the son of Indra.]	103	11100 BCE
62.	**Aṣṭaka Vaiśvāmitra** [Son of Viśvāmitra.]	104	11300 BCE
63.	**Sumitra, Durmitra or Kautsa**	105	11200 BCE
64.	**Bhūtāṁśa Kāśyapa**	106	11100 BCE
65.	**Divya Āṅgirasa**	107	10900 BCE
66.	**Asura Paṇis and Saramā Devaśunī (Rishikā)** [She was the contemporary of Indra and King Divodāsa Atithigva.]	108	11325 BCE
67.	**Juhū Brahmajāyā (Rishikā)** [She was the wife of Brahma III.]	109	11225 BCE

68.	**Rāma Jāmadagnya** [Paraśurāma]	110	11175 BCE
69.	**Aṣṭādaṁṣṭra Vairūpa**	111	10900 BCE
70.	**Nabhaḥ-Prabhedana Vairūpa**	112	11000 BCE
71.	**Śata-Prabhedana Vairūpa**	113	11000 BCE
72.	**Sadhri Vairūpa**	114	11000 BCE
73.	**Vārṣṭihavya Upastuta**	115	11000 BCE
74.	**Agniyuta Sthaura**	116	10900 BCE
75.	**Bhikśu Āṅgirasa**	117	10900 BCE
76.	**Urukśaya Āmahīyava** [Son of King Amahīyu. He became a Brāhmaṇa of Āṅgirasa family.]	118	10900 BCE
77.	**Labarūpāpanna Indra**	119	11000 BCE
78.	**Brihaddiva Ātharvaṇa**	120	11100 BCE
79.	**Hiraṇyagarbha Prājāpatya** [Son of Prajāpati.]	121	11100 BCE
80.	**Chitramahā Vāsiṣṭha**	122	10900 BCE
81.	**Vena Bhārgava**	123	11175 BCE
82.	**Agni, Varuṇa and Soma**	124	11250 BCE
83.	**Vāk Āṁbhriṇī (Rishikā)**	125	10900 BCE
84.	**Aṁhomuk Vāmadeva or Kulmalabarhiṣa Śailūṣa**	126	11200 BCE
85.	**Kuśika Saubhara or Rātri Bhāradwājī (Rishikā)**	127	11000 BCE
86.	**Vihavya Āṅgirasa**	128	11000 BCE
87.	**Parameṣṭhi Prajāpati** [Teacher of Indra and Virochana.]	129	11225 BCE
88.	**Yajña Prājāpatya** [Son of Prajāpati Parameṣṭhi.]	130	11150 BCE
89.	**Sukīrti Kākśīvata** [Son of Kakśīvat.]	131	10900 BCE
90.	**Śakapūta Nārmedha** [Son of Nrimedha Āṅgirasa.]	132	11000 BCE
91.	**Rājarshi Sudāsa Paijavana**	133	11275 BCE
92.	**Yauvanāśva Māndhātā**	134	11090 BCE

93.	**Godhā (Rishikā)**	134 (6-7)	11000 BCE
94.	**Kumāra Yāmāyana**	135	11150 BCE
95.	**Jūti, Vāvajūti, Viprajūti, Vriṣāṇaka, Karikrata, Etaśa and Riṣyaśriṅga**	136	11100 BCE
96.	**Bharadwāja, Kaśyapa, Gotama, Atri, Viśvāmitra, Jamadagni and Vasiṣṭha**	137	11200-10800 BCE
97.	**Aṅga Aurava**	138	11000 BCE
98.	**Viśvāvasu Devagandharva** (Elder brother of Paraśurāma)	139	11200 BCE
99.	**Agni Pāvaka**	140	11200 BCE
100.	**Agni Tāpasa**	141	11200 BCE
101.	**Jaritā Śārṅga, Droṇa Śārṅga, Sārisrikta Śārṅga, Stambamitra Śārṅga**	142	11200 BCE
102.	**Sāṅkhya Atri**	143	10900 BCE
103.	**Suparṇa Tārkśya or Urdhvakuśana Yāmāyana**	144	11200 BCE
104.	**Indrāṇī (Rishikā)**	145	11300 BCE
105.	**Airaṁmada Devamuni**	146	10900 BCE
106.	**Suveda Śairīṣi**	147	10900 BCE
107.	**Prithu Vainya** [Son of Vena Bhārgava, and a contemporary of Paraśurāma.]	148	11220 BCE
108.	**Archan Hairaṇyastūpa** [Son of Hiraṇyastūpa.]	149	10950 BCE
109.	**Mriḍīka Vāsiṣṭha**	150	11100 BCE
110.	**Śraddhā Kāmāyanī (Rishikā)**	151	11100 BCE
111.	**Śāsa Bhāradwāja**	152	10900 BCE
112.	**Devajāmayaḥ, the mothers of Indra (Rishikās)**	153	11100 BCE
113.	**Yamī Vaivasvatī**	154	11250 BCE
114.	**Śiriṁbiṭha Bhāradwāja**	155	11000 BCE
115.	**Ketu Āgneya**	156	10900 BCE
116.	**Bhuvana Āptya** [Father of Viśvakarmā II.]	157	11275 BCE
117.	**Chakśu Saurya**	158	11200 BCE

118.	**Śachī Paulomī (Rishikā)**	159	11300 BCE
119.	**Purāṇa Vaiśvāmitra**	160	11000 BCE
120.	**Yakśmanāśana Prājāpatya** [Son of Prajāpati.]	161	11100 BCE
121.	**Rakśohā Brāhma** [Son of Brahma III.]	162	11150 BCE
122.	**Vivrihā Kāśyapa**	163	11000 BCE
123.	**Prachetā Āṅgirasa** [Father of Dakśa.]	164	11350 BCE
124.	**Kapota Nairrita**	165	10900 BCE
125.	**Riṣabha Vairāja or Śākvara**	166	10900 BCE
126.	**Viśvāmitra Jamadagni** [Viśvāmitra of Jamadagni family.]	167	11000 BCE
127.	**Anila Vātāyana**	168	10900 BCE
128.	**Śabara Kākśīvata** [Son of Kākśīvata.]	169	11000 BCE
129.	**Vibhrāt Saurya**	170	11000 BCE
130.	**Ita Bhārgava**	171	10700 BCE
131.	**Samvarta Āṅgirasa**	172	11500 BCE
132.	**Dhruva Āṅgirasa**	173	11000 BCE
133.	**Abhīvarta Āṅgirasa**	174	10950 BCE
134.	**Urdhvagrāvā Sarpa**	175	10900 BCE
135.	**Ārbhava Sūnuḥ**	176	10950 BCE
136.	**Pataṅga Prājāpatya** [Son of Prajāpati.]	177	11100 BCE
137.	**Ariṣṭanemi Tārkśya**	178	11200 BCE
138.	**Śibi Auśīnara, Pratardana Kāśīrāja and Vasumanāḥ Rauhidaśva**	179	11250 BCE
139.	**Jaya Aindra**	180	11100 BCE
140.	**Pratha Vāsiṣṭha**	181	11000 BCE
141.	**Tapu Mūrdhā Bārhaspatya**	182	11000 BCE
142.	**Prajāvān Prājāpatya** [Son of Prajāpati.]	183	11100 BCE
143.	**Vishnu Prājāpatya** [He was the son of Prajāpati. Prajāpati was the guru of Virochana, son of Prahlāda. Most probably, Vishnu Prājāpatya was Vāmana, the contemporary of King Bali, son of Virochana.]	184	11100 BCE

144.	**Satyadhriti Vāruṇi**	185	10950 BCE
145.	**Ula Vātāyana**	186	10900 BCE
146.	**Vatsa Āgneya**	187	11000 BCE
147.	**Śyena Āgneya**	188	11000 BCE
148.	**Sārparājñī (Rishikā)** [She belonged to the Nāga family.]	189	11200 BCE
149.	**Aghamarṣaṇa Mādhucchandasa** [Son of Madhucchandas Viśvāmitra.]	190	11150 BCE
150.	**Saṁvanana Āṅgirasa**	191	11000 BCE

The chronological study of Rigveda as attempted above clearly indicates that the majority of the sūktas of Rigveda had been written during the period 11800-11000 BCE. The chronological history of Rigveda can be divided into three distinct periods:

1. Early Rigvedic period (14500-11800 BCE)
2. Middle Rigvedic period (11800-11000 BCE)
3. Later Rigvedic period (11000-10500 BCE)

The kings of Manu and Puru dynasties of Rigvedic era regularly performed Vedic Yajñas since 14000 BCE. Indra I performed one hundred Aśvamedha Yajñas. King Bharata I performed many Aśvamedha Yajñas under the *Paurohitya* of Kaṇva Maharshi. Evidently, Vedic Rishis started writing Vedic hymns much before the rise of Puru dynasty. It appears that the descendants of Vasiṣṭha, Viśvāmitra, Kaṇva, Gritsamada, Dīrghatamas, Atri, Aṅgirasa, and others, traditionally preserved the hymns compiled by their ancestors. Since the descendants of Saptarṣi families were generally known by the name of their gotra, the Anukramaṇī of Rigveda simply gives the names of later Rishis who recompiled and edited the hymns written by earlier Rishis in the beginning centuries of Vaivasvata Manvantara (11200-10600 BCE). For instance, Vasiṣṭha Maitrāvaruṇi is credited with the authorship of entire seventh Mandala but it is highly unlikely that he was the sole author of all these hymns. Most probably, he wrote only few hymns but also recompiled the hymns written by his ancestors. Seemingly, the author of Parjanya Sūktas of the seventh Mandala was one

of the earliest Vasiṣṭhas and not Vasiṣṭha Maitrāvaruṇi as indicated in Rigvedānukramaṇī.

Maharshi Kavaṣa Ailūṣa, the son of a slave girl, did not belong to the lineages of Saptarṣis. Some of the Kśatriya Brāhmaṇas, like Tryāruṇa, Trasadasyu and Bhārata Aśvamedha, did not belong to the lineages of Saptarṣis. Therefore, the hymns of these Rishis have been preserved in their own names. Evidently, the hymns of Kavaṣa Ailūṣa (13450 BCE), Tryāruṇa, Trasadasyu and Bhārata Aśvamedha are the oldest hymns of Rigveda. As established above, none of the Rigvedic Rishis can be dated after 10500 BCE. Thus, we can conclude that the available Rigvedic hymns were originally written and compiled around 14000-10500 BCE.

Patañjali's Mahābhāṣya mentions that there are twenty-one branches of Richas or Rigveda (*Ekavimśatidhā Bāhvrichyam*), 100 branches of Yajurveda (*Ekaśatam Adhvaryuśākhā*), 1000 branches of Sāmaveda (*Sahasravartmā Sāmavedaḥ*) and nine branches of Atharvaveda (*Navadhā Ātharvaṇo Vedaḥ*). According to *Charaṇa Vyūha* of Rishi Śaunaka, Rigveda has five branches, namely, Śākala, Bāṣkala, Āśvalāyana, Śāṅkhāyana and Māṇḍūkāyana. Rishi Śaunaka lived around 6500 BCE whereas Patañjali was the contemporary of King Puṣyamitra Śuṅga (1459-1423 BCE). It seems Rigveda had only five original branches but it evolved into twenty-one sub-branches later. At present, only Śākala and Bāṣkala recensions of Rigveda are available. Śākala recension has 1017 hymns whereas Bāṣkala recension has 1028 hymns including eleven Bālakhilya Sūktas. There are total 10552 mantras in Bāṣkala recension of Rigveda but Śaunakīya Anuvākānukramaṇī counts 10580 mantras.

The Date of Yajurveda (14000-10500 BCE)

Yajurveda has mainly two branches: Śukla Yajurveda and Krishna Yajurveda. Seemingly, 100 sub-branches of these two main branches were evolved later. Śaunaka's *Charaṇa Vyūha* gives the list of forty-four branches of Yajurveda but it also mentions that Yajurveda has eighty-six branches. Vishnu Purāṇa also refers to eighty-six branches of Yajurveda.

Vājasaneyī Mādhyandina (Śukla) Yajurveda contains forty Adhyāyas and 1975 mantras whereas Vājasaneyī Kaṇva (Śukla) Yajurveda has forty Adhyāyas and 2086 mantras. Krishna Yajurveda contains 3093 mantras.

Seemingly, the mantras of Yajurveda were written in prose. Therefore, the Cḥandas or meter of Yajurveda mantras is not defined (*Yājuṣām aniyatākśaratvāt ekeṣām cḥando na vidyate*). Puruṣa Sūkta of Rigveda refers to three types of mantras: Rik, Yajur and Sāma.[62] (तस्माद्यज्ञात् सर्वहुतः ऋचः सामानि जज्ञिरे। छन्दाँसि जज्ञिरे तस्माद्यजुस्तस्मादजायत ॥).

Evidently, the mantras of Yajurveda were also written during the period 14000-10500 BCE. The Anukramaṇī of Vājasaneyī Saṁhitā gives following list of Rishis:

	Subject	Adhyaya & Mantra	Rishi	Date
1.	Darśapaurṇamāsa	1.1- 2.28	Parameṣṭhi Prajāpati	11225 BCE
2.	Pitriyajña	2.29 - 2.34	Prajāpati	11225 BCE
3.	Agnyādheya	3.1- 3.8	Prajāpati, Devasena, Agni or Gāndharva	11225 BCE
4.	Agnihotra	3.9 - 3.10	Prajāpati	11225 BCE
5.	Yajamānāgni Upasthānam	3.11- 3.36	Devagaṇa	11200 BCE
6.	Āgotopasthānam	3.37 - 3.43	Āditya	11200 BCE
7.	Chāturmāsya	3.44 - 3.63	Prajāpati	11225 BCE
8.	Agniṣṭoma	4.1 - 8.32	Prajāpati	11225 BCE
9.	Satropasthānam	8.51- 8.53	Devagaṇa	11200 BCE
10.	Naimittika	8.54 - 8.63	Vasiṣṭha	13500 BCE
11.	Vājapeya	9.1- 9.34	Brihaspati-Indra	11200 BCE
12.	Rājasūya	9.35- 10.30	Varuṇa	11200 BCE
13.	Charaka-Sautrāmaṇi	10.31- 10.34	Aśvinī Kumāras	13600 BCE
14.	Agnichayana	11-18	Prajāpati	11225 BCE
15.	Sautrāmaṇi	19-21	Prajāpati	11225 BCE
16.	Aśvamedha	22-25 & 29	Prajāpati	11225 BCE
17.	Agnika-Adhyāya	27	Prajāpati	11225 BCE

18.	Puruṣamedha	30-31	Nārāyaṇa	11200 BCE
19.	Sarvamedha	32	Brahma	11250 BCE
20.	Agniṣṭoma	33.55 - 34.58	Āditya	11200 BCE
21.	Pitri-Adhyāya	35	Āditya/ Devagaṇa	11200 BCE
22.	Pravargya	36 -39	Dadhyang Ātharvaṇa	10850 BCE
23.	Iśāvāsyopaniṣad	40	Dadhyang Ātharvaṇa	10850 BCE

The Anukramaṅī of Vājasaneyī Saṁhitā clearly indicates that Prajāpati Parameṣṭhin had compiled most of the Adhyāyas of Yajurveda. The last five Adhyāyas were compiled by Dadhyang Ātharvaṇa.

The Date of Sāmaveda (14000-10500 BCE)

Sāmaveda has two sections, Pūrvārchikā and Uttarārchikā. Pūrvārchikā has six prapāthakas and 650 mantras. Uttarārchikā has nine prapāthakas and 1225 mantras. But 242 mantras are found in both sections. Thus, there are a total of 1603 (1875-272 = 1603) mantras in Sāmaveda. Out of 1603 mantras of Sāmaveda, 1504 mantras have been taken from Rigveda. Only ninety-nine mantras are new in Sāmaveda. All Rishis of Sāmaveda were Rigvedic Rishis. In fact, Sāmavedic hymns are the Rigvedic hymns that can be sung. Therefore, we can also fix the date of Sāmavedic hymns around 14000-10500 BCE. Śaunaka's *Charaṇa Vyūha* gives the list of twelve branches of Sāmaveda but only three recensions of Sāmaveda (Kauthuma, Rāṇāyanīya and Jaiminīya) are now extant. Interestingly, Aitareya Brāhmaṇa mentions that there were only Rik and Sāma in the beginning of Rigvedic era (*Rik cha vā idamagre Sāma chāstām*).[63] Seemingly, Rigveda and Sāmaveda were little older than Yajurveda.

Sh. Satvalekar listed the following Sāmagānas of Sāmaveda:

	Sāma Songs	Kauthuma-Rāṇāyanīya (No.)	Jaiminīya (No.)
1.	Grāmyageya Gāna	1197	1233

2.	Araṇyageya Gāna	294	291
3.	Uhā Gāna	1026	1802
4.	Uhya Gāna	205	356
	Total	**2722**	**3681**

The Date of Atharvaveda (14000-10500 BCE)

According to Śaunaka's Charaṇa Vyūha, Paippalāda, Dānta, Pradānta, Snāta, Sautna, Brahmadābala, Śaunakī, Devadarśi and Chāraṇavidyā were the nine branches of Atharvaveda. Sāyaṇa also gives the list of nine branches as Paippalāda, Tauda, Mauda, Śaunakīya, Jājala, Jalada, Brahmavada, Devadarśi and Chāraṇavaidya. It seems Dānta, Pradānta, Snāta and Sautna branches of pre-Rāmāyaṇa era came to be known as Tauda, Mauda, Jājala and Jalada branches after 2000 BCE because there were only nine branches of Atharvaveda. Patanjali (1490-1410 BCE) of Mahābhāṣya, Śabara Swāmi (1100 BCE) of Śābara Bhāṣya and Jayāditya (780-700 BCE) of Kāśīkāvritti refer to Mauda branch of Atharvaveda. Only two branches (Paippalāda and Śaunakīya) are now extant.

Paippalāda Saṁhitā was the oldest branch of Atharvaveda. It is also known as Āṅgirasaveda because the hymns of Atharva Saṁhitā were written by the Rishis of Āṅgirasa gotra. Yāska's Nirukta refers to two mantras of Paippalāda Saṁhitā. Maharshi Pippalāda (around 10800 BCE) was the son of Dadhīchi II and the grandson of Atharva Āṅgirasa. The tradition of Atharvaveda begins from Atharva Āṅgirasa (13550 BCE). The manuscripts of Paippalāda Saṁhitā were found in Kashmir and Orissa. Interestingly, Patanjali mentions the following mantra as the first mantra of Paippalāda Saṁhitā but it is the 26th mantra in Śaunaka Saṁhitā.

शन्नो देवीरभिष्टय आपो भवन्तु पीतये। शंयोरभिस्रवन्तु नः ॥

Śaunaka Saṁhitā was the second oldest branch of Atharvaveda. Vishnu Purāṇa mentions that Saindhavāyana or Saindhava was also one of the teachers of Atharvaveda. Śaunaka divided his Saṁhitā into two, gave one to Babhru, and the other to Saindhavāyana. Saindhavāyana was the founder of the Saindhava school of Brāhmaṇas.

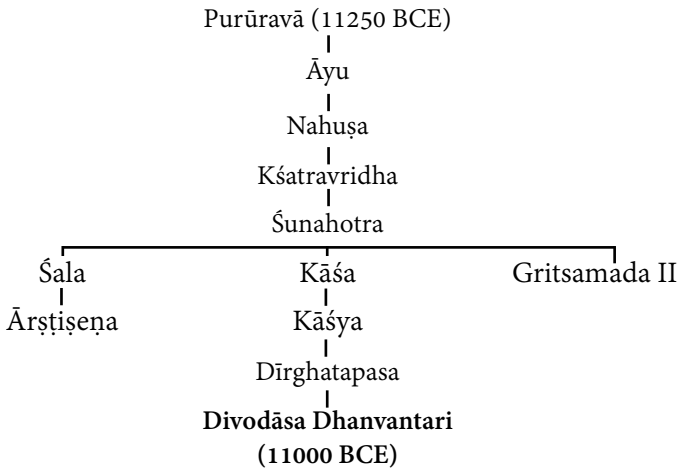
Paippalāda Saṁhitā divided into twenty Kāndas (Chapters) and it consists of 923 hymns and 7837 mantras. Śaunaka Saṁhitā is also divided

into twenty Kāndas but it consists of 759 hymns and 5987 mantras. Śaunaka Saṁhitā has more than 900 mantras of Rigveda. Thus, Paippalāda Saṁhitā has 2900 more mantras than Śaunaka Saṁhitā. Unfortunately, no Anukramaṇī of Paippalāda Samhitā is available. The Anukramaṇī of Śaunaka Saṁhitā gives the following names of Rishis who authored the hymns of Atharvaveda. The chronology of the Rishis of Atharvaveda (Śaunaka Saṁhitā) can be arrived as attempted below.

	Rishis of Atharvaveda	In CE
1.	**Agastya** [He was also the author of many Rigvedic hymns.]	11290-11200 BCE
2.	**Aṅgirasa**	11300 BCE
3.	**Apratiratha** [Sāyaṇa refers to Apratiratha as the son of Indra (*Trayodaśārcham chaturtham sūktam Indraputrasya Apratirathanāmnā Ārsham*, RV 10.103).]	11300 BCE
4.	**Aṣṭaka** [He was the son of Viśvāmitra.]	11300 BCE
5.	**Atharva Āṅgirasa** [He was the father of Dadhīchi II. He was also an Ayurvedic physician.]	10900 BCE
6.	**Atharva** [Most probably, Rishi Pippalāda was also known as Atharva because he was the grandson of Atharva Āṅgirasa. Patanjali mentions that the first mantra of the 6th Sūkta (1st Kanda) of Atharvaveda was written by Pippalāda but the Anukramaṇī names the Rishi as Atharva.]	10850 BCE
7.	**Atharvāchārya** [See No. 6.]	10850 BCE
8.	**Atri**	11300 BCE
9.	**Ayāsya Āṅgirasa** [He was a junior contemporary of King Hariśchandra. He was the Udgātā in the Yajña related to Śunaḥśepa.]	11250 BCE
10.	**Āyu** [He was the son of Purūravā and Urvaśī.]	11220 BCE
11.	**Babhru or Babhrupiṅgala** [He was the son of Devavridha.]	11200 BCE
12.	**Bādarāyaṇi** [Bādarāyaṇi was the son of Bādarāyaṇa Vyāsa who was the founder of Vedānta philosophy.]	10850 BCE
13.	**Bhaga**	11000 BCE
14.	**Bhāgali**	11000 BCE
15.	**Bharadwāja**	11100 BCE

16.	**Bharga** [Bharga was the son of Pragātha Kaṇva as stated by Sāyaṇa (*Pragāthaputrasya Bhargasya…* RV 8.60).]	11000 BCE
17.	**Bhārgava** [See No. 18.]	11000 BCE
18.	**Bhārgava Vaidarbhi** [Generally, Bhārgavas were the descendants of Maharshi Bhrigu. But there was a Bhrigu in Āṅgirasa gotra. Vaidarbhi indicates that he belonged to the Vidarbha kingdom.]	11000 BCE
19.	**Bhrigu** [See No. 20.]	11100 BCE
20.	**Bhrigu Ātharvaṇa** [He was a descendant of Atharva Āṅgirasa.]	11100 BCE
21.	**Bhuvana Sādhana** [Rishi Sādhana was the son of Bhuvana. Bhuvana was also the father of Viśvakarmā.]	11200 BCE
22.	**Brahma** [Jaiminīya Brāhmaṇa says that Indra was himself a Brahma (*Indra eva Brahmā āsīt*. 3.374). He was the teacher of Prajāpati Parameṣṭhin.]	11250 BCE
23.	**Brahmāskanda**	10900 BCE
24.	**Brigvaṅgirasa** [See No. 20. He refers to Bāhlīkas, Mahāvriṣas, Mūjavats, Gandhāris, Aṅgas and Magadhas.]	10700 BCE
25.	**Brihaddiva and Atharva** [They were the descendants of Atharva Āṅgirasa.]	10700 BCE
26.	**Brihaspati** [Father of Bharadwāja and grandfather of Vidatha.]	10900 BCE
27.	**Brihat Śukra**	10700 BCE
28.	**Budha** [He was the son of Soma.]	11270 BCE
29.	**Chātana**	10900 BCE
30.	**Devajāmi (Rishikā)** [Devajāmis were the mothers of Indras (*Devajāmaya Indramātaraḥ* – as stated by Sāyaṇa RV 10.153).]	11000 BCE
31.	**Devātithi**	10800 BCE
32.	**Draviṇodā**	10900 BCE
33.	**Druhvana**	11000 BCE
34.	**Dyutāna** [He was the descendant of Marutas (Sāyaṇa – *Dyutānākhyo Marutam putra Rishiḥ…* RV 8.96). He was probably a contemporary of Tiraśchir Āṅgirasa.]	11150 BCE

35.	**Gārgya** [The sūkta of Gārgya gives the list of Nakśatras starting from Krittikā. Winter solstice used to occur at Krittikā Nakśatra around 9250-8300 BCE. Seemingly, this sūkta was finally edited around 9000 BCE.]	11200 BCE & 9000 BCE
36.	**Garutmān**	11200 BCE
37.	**Gopatha**	10800 BCE
38.	**Gośukti and Aśvaśukti** [They belonged to Kaṇva gotra as indicated by Sāyaṇa. Tāndya Brāhmaṇa also mentions these Rishis.]	11100 BCE
39.	**Gotama Rāhūgaṇa** [He was the son of Rāhūgaṇa. Śatapatha Brāhmaṇa indicates that he was the contemporary of King Janaka Vaideha and Rishi Yājñavalkya.]	10950 BCE
40.	**Gritsamada**	11100 BCE
41.	**Indrāṇī [Rishikā]**	11200 BCE
42.	**Iriṁbiṣṭhi** [He belonged to Kaṇva gotra.]	11000 BCE
43.	**Jagadbīja Puruṣa**	10900 BCE
44.	**Jamadagni**	11200 BCE
45.	**Jātikāyana**	10700 BCE
46.	**Kabandha**	10600 BCE
47.	**Kali** [Kali was also the son of Pragātha.]	11000 BCE
48.	**Kāṅkāyana**	10900 BCE
49.	**Kāṇva**	11100 BCE
50.	**Kapiñjala**	10800 BCE
51.	**Kaśyapa**	11290 BCE
52.	**Kaurupathi**	11000 BCE
53.	**Kauśika** [Gāthi Kauśika]	11200 BCE
54.	**Krishna**	11100 BCE
55.	**Kriti** [He was the contemporary of King Sindhudvīpa, son of Ambarīṣa.]	11150 BCE
56.	**Kurustuti or Kurusuti** [He belonged to the Kāṇva lineage.]	10900 BCE
57.	**Kutsa** [Kutsa was the son of Arjuna and the grandson of Indra. He was probably the disciple of Prajāpati.]	11150 BCE
58.	**Madhucchandas** [Son of Viśvāmitra.]	11150 BCE

59.	**Mārīchi Kaśyapa** [See No. 51.]	11290 BCE
60.	**Matrināma**	10800 BCE
61.	**Mayobhu** [Yajurveda (11.18) refers to Mayobhu.]	11000 BCE
62.	**Medhātithi**	11000 BCE
63.	**Medhyātithi**	11000 BCE
64.	**Mrigāra**	10900 BCE
65.	**Nārāyaṇa**	11200 BCE
66.	**Nodhā** [Nodhā Gautama was also the author of Rigvedic hymn 9.93.]	10950 BCE
67.	**Nrimedha** [Nrimedha Āṅgirasa, RV 8.89-90.]	10850 BCE
68.	**Parucchepa** [He was also the author of RV 1.129-139. Most probably, he was a descendant of Divodāsa Dhanvantari.] The genealogy of Divodāsa:	10850 BCE

69.	**Pativedana**	10800 BCE
70.	**Prachetā** [He belonged to Āṅgirasa gotra.]	11200 BCE
71.	**Pragātha**	11000 BCE
72.	**Priyamedha** [Priyamedha belonged to Kaṇva Āṅgirasa lineage. There was another Priyamedha who was the son of Indra.]	11000 BCE
73.	**Prajāpati**	11200 BCE
74.	**Pramochana**	10700 BCE

75.	**Praśochana**	10700 BCE
76.	**Praskaṇva** [Son of Kaṇva Āṅgirasa (11200 BCE).]	11175 BCE
77.	**Pratyaṅgirasa**	10700 BCE
78.	**Purāṇa** [He belonged to the Viśvāmitra gotra as indicated by Sāyaṇa (*Vaiśvāmitrasya Purāṇasya…* RV 10.160).]	11000 BCE
79.	**Puruhanmā** [He belonged to Aṅgirasa lineage. Pañchaviṁśa Brāhmaṇa (14.9.29) refers to him as Vaikhānasa.]	10800 BCE
80.	**Purumīḍha and Ajamīḍha** [King Purumīḍha and Ajamīḍha were the sons of Suhotra and great grandsons of King Bharata, the great (13450 BCE).]	13350 BCE
81.	**Puṣṭigu** [Kaṇva gotra.]	10800 BCE
82.	**Rakśohā** [He was the son of Brahma II.]	11200 BCE
83.	**Rebha** [He was the son of Rishi Kaśyapa.]	11260 BCE
84.	**Ribhu**	11000 BCE
85.	**Sārparājñī (Rishikā)**	11000 BCE
86.	**Sarvahāri**	10900 BCE
87.	**Saubhari** [He married the daughters of King Māndhātā.]	11125 BCE
88.	**Savitā** [Prajāpati?]	11200 BCE
89.	**Savya** [Son of Indra.]	11000 BCE
90.	**Śakti** [Son of Vasiṣṭha.]	11210 BCE
91.	**Śambhu** [Son of Śukāchārya.]	11150 BCE
92.	**Śamyu** [Son of Brihaspati.]	11150 BCE
93.	**Śantāti**	11000 BCE
94.	**Śaśakarṇa** [He belonged to Kaṇva lineage.]	10900 BCE
95.	**Śaunaka** [Śaunaka I was the descendant of Gritsamada I. He was a later descendant of Śaunaka Bhrigu lineage.]	10900 BCE
96.	**Śiriṁbiṭha** [He was the son of Bhāradwāja.]	10850 BCE
97.	**Śruṣṭigu** [He belonged to Kaṇva lineage.]	10900 BCE
98.	**Śrutakakśa and Sukakśa**	10900 BCE
99.	**Śukra** [He was not the famous Śukrāchārya. Jaiminīya Upaniṣad Brāhmaṇa (2.7.7) mentions that one Śukra was the descendant of Jābāla Rishi. Satyakāma Jābāla was the disciple of Rishi Pippalāda.]	11000 BCE

100.	**Śunaḥśepa** [He was adopted by Viśvāmitra and came to be known as Devarāta.]	11180 BCE
101.	**Sindhudvīpa** [Vriṣagira had five Rajarshi sons, Rijrāśva, Ambarīṣa, Sahadeva, Bhayamāna and Sirādhas (RV 1.100). Sindhudvīpa was the son of King Ambarīṣa. Brihaddevatā (6.152-153) tells us that Sindhudvīpa wrote a hymn (RV 10.9) for Indra who killed Viśvarūpa.]	11200 BCE
102.	**Sobhari** [See No. 87]	11125 BCE
103.	**Suditi Purumīḍha**	10700 BCE
104.	**Sukīrti**	10900 BCE
105.	**Suryā Sāvitrī** [Sāvitrī was the daughter of Sūrya. Her sister Tāptī married King Saṁvarṇa (11520 BCE). King Kuru, the founder of Kuru dynasty was born to Tāptī.]	11500 BCE
106.	**Tiraśchir Āṅgirasa**	11000 BCE
107.	**Triśoka** [He was a contemporary of King Indra as indicated in Brihaddevatā (6.89).]	11000 BCE
108.	**Ucchochana**	10800 BCE
109.	**Uddālaka** [Uddālaka was the famous disciple of Rishi Ayoda Dhaumya. Rishi Asita-Devala was the elder brother of Rishi Dhaumya. Most probably, Devala was the disciple of Vyāsa I (11180-11050 BCE), son of Parāśara. Devala married the daughter of Rishi Kunḍina. He had a daughter named Suvarchalā. She was married to the son of Uddālaka Āruṇi. Mahābhārata's Śāntiparva (275th chapter) indicates that Rishi Asita-Devala was the founder of Sāṅkhya philosophy. Rishi Jaigīṣavya was the contemporary of Asita-Devala. Interestingly, Śāṅkhāyana Āraṇyaka indicates that there were two Uddālakas and it differentiates between Uddālaka and Uddālaka Āruṇi.]	11170 BCE
110.	**Unmochana**	11000 BCE
111.	**Uparibabhrava**	10900 BCE
112.	**Vāmadeva**	11200 BCE
113.	**Varu** [He belonged to Āṅgirasa gotra. He was one of the sons of Indra. Jaya, Varu, Vasukra, Vimada, Vriṣākapi and Sarvahāri were the sons of Indra.]	11000 BCE

114.	**Varuṇa** [Varuṇa married Charṣaṇī. They had two sons, Brigu and Satyadhriti. Bhāgavata Purāṇa names Satyadhriti as Vālmiki. Most probably, Varuṇa was the 9th successor of Prachetas. Brigu Vāruṇi and Satyadhriti Vāruṇi authored the Rigvedic hymns 9.65 and 10.185 respectively. There was another Varuṇa (14000 BCE), son of Aditi.]	11150 BCE
115.	**Vasiṣṭha**	11200 BCE
116.	**Vasukra** [He was the son of Indra.]	11000 BCE
117.	**Vatsa** [He belonged to Kaṇva Gotra.]	10800 BCE
118.	**Vena** [He was the father of Prithu and belonged to Bhrigu gotra. Probably, a senior contemporary of Paraśurāma.]	11270 BCE
119.	**Vihavya** [He was probably the contemporary of Jamadagni.]	11200 BCE
120.	**Virūpa** [He belonged to Āṅgirasa Gotra.]	10900 BCE
121.	**Viśvamanā** [He was the descendant of Vaiyāśva and a friend of Indra (Pañchaviṁśa Brāhmaṇa-15.5.20).]	11300 BCE
122.	**Viśvāmitra**	11200 BCE
123.	**Vītahavya** [He was Vītahavya II and belonged to Bharadwāja gotra.]	11100 BCE
124.	**Vriṣākapi** [He was the son of Indra.]	11100 BCE
125.	**Yama**	11250 BCE
126.	**Yayāti**	11180 BCE

Some of the hymns or mantras of Atharvaveda are dedicated to Devatas, which are not found in Rigveda like Agnāvishnu (7.30), Ekāṣṭakā [Māgha Krishna Aṣṭamī] (3.10.5), Kāma Deva (3.29.7), Amāvāsyā (7.84), Tisro Devyaḥ [Idā, Bhāratī and Sarasvati] (5.27.9), Dhanvantari (2.3), Parāśara (6.65), Sapta-Sindhu (4.6.2), Arbudi (11.11) and more.

Ekāṣṭakā Sūkta of Atharvaveda

Rishi Atharva (most probably, Pippalāda) was the author of the hymn of Atharvaveda.[64] He dedicated the mantras of this Sūkta to Ekāṣṭakā, Saṁvatsara and Ritus (seasons). Ekāṣṭakā is a Vedic ritual performed on Māgha Krishna Aṣṭamī. Rishi Atharva indirectly indicated the occurrence of autumnal equinox at Māgha Krishna Saptamī. Māgha Krishna Aṣṭamī used to be the first tithi of Śarad Ritu. Evidently, Ekāṣṭakā was the first

tithi after the occurrence of autumnal equinox. Rishi Pippalāda Atharva lived around 10850 BCE. The Saṁvatsara or the New Year used to begin immediately after the occurrence of autumnal equinox. During the period 11000-10500 BCE, autumnal equinox used to occur on Māgha Krishna Saptamī. This may be the reason why Rishi Atharva calls Ekāṣṭakā the wife of Saṁvatsara.

Rishi Gārgya of Atharvaveda (11200 BCE)

Rishi Garga was the son of Rishi Bharadwāja and belonged to Āṅgirasa gotra. The progeny of Rishi Garga came to be known as Gārgyas. There were many famous Rishis known as Gārgya. Rishi Gārgya was the author of two Nakśatra Sūktas of Atharvaveda.[65] These Sūktas have been edited around 9000 BCE. The winter solstice was shifted from Rohiṇī to Krittikā around 9250 BCE. Rishi Gārgya, a later descendant of Gārgyas, observed this shifting of winter solstice around 9200-9000 BCE. He founded the astronomical siddhānta known as Gārgya Siddhānta and re-arranged the list of twenty-eight Nakśatras starting from Krittikā. He gives the list of twenty-eight Nakśatras starting from Krittikā in his Nakśatra Sūktas and mentions the occurrence of Ayana (autumnal equinox) in the month of Māgha (*ayanam Maghāsu cha*). We can conclude that the final composition of the hymns of Rigveda, Yajurveda, Sāmaveda and Atharvaveda was completed by 10500 BCE, whereas the final editing of the hymns of Atharvaveda was completed by 9000 BCE.

Kuntāpa Sūktas of Atharvaveda

Ten Sūktas of the 20th Kanda of Atharvaveda are known as Kuntāpa Sūktas.[66] Sāyaṇa did not comment on these Sūktas. They have also been considered to be "Khila Sūktas". A mantra of this Sūkta mentions that Rishi Māhaha received 100 Niṣkas (gold coins) from a king.[67] It seems the use of gold coins was in vogue during the later Vedic period (11200-10500 BCE). The early Kuru King Parīkśita (11300 BCE) is mentioned in these Sūktas.[68] It also refers to Dāśarājña War.[69] Some Kuntāpa Sūktas are known as "Etaśa Pralāpa".[70] Aitareya Brāhmaṇa gives the story of Rishi Etaśa and his son Abhyāgni.[71] Evidently, Kuntāpa Sūktas were written at least before the lifetime of Mahidāsa Aitareya. Atharvaveda mentions Bāhlīkas, Mahāvriṣas, Mūjavats, Gandhāris, Aṅgas and Magadhas.[72] Paippalāda Saṁhitā refers to Kāshi, Gāndhāra and Magadha.[73]

The Beginning of Saṁvatsara from Śarad Season in the Rigvedic Period

Traditionally, Vedic New Year commenced from Māgha Śukla Pratipadā at Śraviṣṭhā/Dhaniṣṭhā Nakśatra since early Rigvedic period. The summer solstice used to occur in Māgha month around 14500 BCE. Thus, the New Year of early Rigvedic period commenced from the summer solstice and Śraviṣṭhā/Dhaniṣṭhā was the first in the list of twenty-eight Nakśatras. During the era of Viśvāmitra and Vasiṣṭha (13500 BCE), Viśvāmitra proposed the list of Nakśatras starting from Śravaṇa. Vasiṣṭha had discovered the occurrence of autumnal equinox at Aśvinī Nakśatra and proposed the beginning of the calendrical year from Śarad season.

Gradually, Śarad Ritu became synonymous with the beginning of New Year. Many hymns of Vedas written after 11800 BCE refer to Śarad Ritu as the beginning of New Year. Dīrghatamas Auchathya mentions Viṣuvat (autumnal equinox) in his hymn and indicates the beginning of Saṁvatsara from Viṣuvat.[74] The Rigvedic hymn of Rishi Yakśmanāśana Prājāpatya refers to 100 years as 100 Śarad seasons.[75]

The lunisolar calendar of the traditional Paitāmaha Siddhānta also gradually shifted from Varṣā season (summer solstice) to Śarad season (autumnal equinox) around 12500-11500 BCE. Rigvedic astronomers might have revised the list of twenty-eight Nakśatras starting from Mrigaśirā because winter solstice used to occur at Mrigaśirā in the beignning of Vaivasvata Manvantara (11200 BCE).

The Shifting of Winter Solstice from Mrigaśirā to Rohiṇī (10200 BCE), Rohiṇī to Krittikā (9200 BCE), Krittikā to Bharaṇī (8200 BCE) and Bharaṇī to Aśvinī (7200 BCE)

Rigvedic astronomers introduced the Mrigaśirādi list of twenty-eight Nakśatras around 11200 BCE. They identified the occurrence of winter solstice in Mrigaśirā as Prajāpati and twenty-seven Nakśatras as his daughters. They also witnessed the heliacal rising of Rohiṇī Nakśatra. Therefore, Rohiṇī was also known as Uṣas. After 1000 years, winter solstice shifted from Mrigaśirā to Rohiṇī around 10200 BCE. Rigvedic astronomers were utterly perplexed about why Prajāpati went on top of his own daughter Uṣas (Rohiṇī). This astronomical event has been referred to in Pañchaviṁśa Brāhmaṇa (8.2.10), Aitareya Brāhmaṇa (6.5.27),

Śatapatha Brāhmaṇa (1.7.4.1-3), Brihdāraṇyaka Upaniṣad, Ādi Śaṅkara's commentary (1.4.3) and Maitrāyaṇī Saṁhitā (4.214, 35.11-15).

Evidently, the Sun rising in Mrigaśirā at winter solstice had been personified as Prajāpati [यो ह्येव सविता स प्रजापतिः (Śatapatha Brāhmaṇa 12.3.5.1), प्रजापतिर्वै सविता (Tāndya Brāhmaṇa 8.2.10)]. When winter solstice shifted from Mrigaśirā to Uṣas (Rohiṇī) around 10200 BCE, it was assumed that Prajāpati desired his own daughter and had intercourse with her. It was also mythologically narrated that Rudra, the devatā of Ārdra Nakśatra, killed Prajāpati because of the sin he had committed. The arrow formation of stars in Mrigaśirā constellation has been metaphorically represented by the slaying of Prajāpati by Rudra.

The shifting of winter solstice from Mrigaśirā to Rohiṇī led to revision of the list of Nakśatras and the Rohiṇyādi list of twenty-eight Nakśatras was introduced. Later, the winter solstice had again shifted from Rohiṇī to Krittikā around 9250 BCE and the Krittikādi list of Nakśatras was introduced. The winter solstice shifted from Bharaṇī to Aśvinī around 7200 BCE and the Aśvinyādi list of Nakśatras came into existence. Vedic astronomers also excluded Abhijit from the list of Nakśatras and introduced the list of twenty-seven Nakśatras around 9000-8000 BCE.

As explained by Sh. PK Phadnis, Abhijit was at celestial North Pole around 12000 BCE but its declination gradually reduced from 85-degree (12000 BCE) to 65-degree (9000 BCE), causing it to drop down to horizon after 9000 BCE. Seemingly, Abhijit had gone below the horizon around 9000-8000 BCE. Thus, Abhijit was excluded from the scheme of twenty-eight Nakśatras and the scheme of twenty-seven Nakśatras came into existence. Taittirīya Saṁhitā (8800 BCE) gives the list of twenty-seven Nakśatras but follows the traditional list of twenty-eight Nakśatras. Seemingly, Abhijit Nakśatra was dropped around 9000-8000 BCE.

Mahābhārata gives the invaluable account of how Rohiṇyādi list of Nakśatras was introduced by Brahma.[76]

अभिजित् स्पर्धमाना तु रोहिण्या कन्यसी स्वसा।
इच्छन्ती ज्येष्ठतां देवी तपस्तप्तुं वनं गता ॥
तत्र मूढोऽस्मि भद्रं ते नक्षत्रं गगनात् च्युतम्।
कालं त्विमं परं स्कन्द ब्रह्मणा सह चिन्तय ॥
धनिष्ठादिस्तदा कालो ब्रह्मणा परिकल्पितः।

रोहिणी ह्यभवत् पूर्वमेवं संख्या समाभवत् ॥
एवम उक्ते तु शक्रेण त्रिदिवं कृत्तिका गताः ।
नक्षत्रं सप्तशीर्षाभं भाति तद वह्निदैवतम् ॥
विनता चाब्रवीत् स्कन्दं मम त्वं पिण्डदः सुतः ।
इच्छामि नित्यम् एवाहं त्वया पुत्र सहासितुम् ॥
एवम अस्तु नमस्तेऽस्तु पुत्रस्नेहात् प्रशाधि माम् ।
स्नुषया पूज्यमाना वै देवि वत्स्यसि नित्यदा ॥

"The younger sister of Rohiṇī (Krittikā) competing with Abhijit went to forest to perform penance in quest of becoming greater than Abhijit. This was the time when Brahma said to Skanda that I am confused how one Nakśatra fell from the sky. Thus, Brahma revised the calendar starting from Dhaniṣṭhā Nakśatra and introduced the list of Nakśatras starting from Rohiṇī."

Nilakantha's commentary:

"कन्यसी = कनिष्ठा, वनं गता, अधिकारं त्यक्त्वा इति शेषः। सा च ज्येष्ठता स्पर्धया गगनात् च्युता अतो अहं मूढोस्मि नक्षत्रसंख्यापुराणस्य अज्ञानात् इति भावः। निष्ठादिरिति, यस्य नक्षत्रस्य आद्यक्षणात् चन्द्रसूर्य ग्रहाणां योगः तद् युगादिनक्षत्रम्। तच्च रोहिण्यभूत्। तदा अभिजित्पतनकाले तु एकन्यूनैः अहोरात्रैः भगणस्य भोगात् कृतयुगादिनक्षत्रं धनिष्ठैवाभवत् इत्यर्थः। संख्या कलाकाष्ठादीनाम्॥ तथा च कृत्तिकाभिरेव नक्षत्रसंख्यापूर्तिम् कुर्वन्ति; शक्राशयं ज्ञात्वा ताः त्रिदिवं गताः। ननु षट् कृत्तिकाः कथं सप्तशीर्षाभं इत्यत आह विनता इति ऋषिपत्नीनाम् इव गरुत्मत्याः अपि रूपं स्वाहया धृतिम् इति तत्साहित्यात् सप्तशीर्षाभं इत्यर्थः॥"

These verses of Mahābhārata relate the story of how Brahma had to revise the list of Nakśatras starting from Rohiṇī around 10200 BCE. During 10200 BCE, Vedic astronomers observed the shifting of winter solstice from Mrigaśirā to Rohiṇī. Most probably, Vedic astronomers understood that this precession of one Nakśatra would occur in a cycle of 1000 years. Therefore, they introduced the lunisolar calendar of 5-year Yugas that commenced from Dhaniṣṭhā Nakśatra on Māgha Śukla Pratipadā. Thus, Dhaniṣṭhādi and Māgha Śuklādi calendar and Rohiṇyādi list of twenty-eight Nakśatras came into popular use. In all probability, the precession of one Nakśatra has been narrated in the Mahābhārata as one Nakśatra fell from the sky. The later introduction of Krittikādi list of Nakśatras and the exclusion of Abhijit from Nakśatras had been metaphorically narrated as

Krittikās, competing with Abhijit, going to the forest to perform penance in the quest of becoming greater than Abhijit.

Sh. PV Vartak misinterpreted the stanza "नक्षत्रं गगनात् च्युतम्" and claimed that Abhijit fell from the sky to become the pole star around 12000 BCE. If the author of these verses intended to narrate the fall of Abhijit, he could have easily stated "अभिजित् गगनात् च्युतम्" instead of "नक्षत्रं गगनात् च्युतम्". Nakśatra is a common noun and cannot be interpreted as Abhijit. It is also impossible to borrow the word "Abhijit" from the preceding verse because "अभिजित् स्पर्धमाना" is a compound word used as an epithet for the feminine noun "कन्यसी स्वसा". Moreover, there is no reference of the fall of Abhijit in entire literature of ancient India. Sh. Prabhakar Phadnis has rightly pointed out the fallacy of the theory of the fall of Abhijit: "Any star not at the point of North Pole will go around the pole once a day. If it is far away, the circle will be large and at the bottommost point it may touch horizon or drop below, its highest point could be overhead. If then it progressively increases its declination, its highest point will no doubt move downwards but the lowest point will keep rising from below horizon towards the point of North Pole. If so, how can it be considered a fall?" Sh. PV Vartak also speculated that the position of Krittikā at summer solstice was narrated as the younger sister of Rohiṇī going to the forest to perform penance but he did not explain how Krittikā was competing with Abhijit.

In fact, the Mahābhārata mentions these historical calendrical revisions in the context of how Krittikās attained imperishable heaven. Six Krittikās were forsaken by their husbands. They went to their son Skanda Kumāra and asked him to give svarga. Thus, Krittikās attained svarga by the efforts of their son Skanda. It appears that the Mahābhārata linked Krittikā's mythological attainment of svarga with the first position of Krittikās in the list of Nakśatras around 9200 BCE. Thus, the Mahābhārata's Vana Parva refers to the introduction of Dhaniṣṭhādi and Māgha Śukladi calendar and Rohiṇyādi list of Nakśatras around 10200 BCE, Krittikādi list of Nakśatras around 9200 BCE and the exclusion of Abhijit from Nakśatras around 9000-8000 BCE.

4

The Age of the Compilation of Saṁhitās, Brāhmaṇas, Āraṇyakas and Upaniṣads (10500 - 6777 BCE)

The Nāsadīya Sūkta of Rishi Parameṣṭhi, and the Puruṣa Sūkta of Rishi Nārāyaṇa, laid strong foundations for the evolution of various schools of Indian philosophy.[1] These two important Sūktas were composed around 11200 BCE. Since the Sūktas of all four Vedas had been originally composed around 14000-10500 BCE, we can roughly fix the date of the commencement of post-Vedic era around 10500 BCE. Veda Vyāsa, a disciple of Jātūkarṇya and a contemporary of Devakīputra Krishna, had formally compiled the four Vedas and taught them to his four disciples: Paila, Vaiśampāyana, Jaimini and Sumantu.

Jātūkarṇya (11200-11100 BCE)
Jātūkarṇya was the guru of Veda Vyāsa. He was the son of Rishi Jatūkarṇa. Agniveśa and Jatūkarṇa were contemporaries. They were the students of Āyurveda and lived around 11200-11100 BCE. Agniveśa was the author of the earliest version of Charaka Saṁhitā. Śatapatha Brāhmaṇa mentions that Jātūkarṇya was the greatest scholar of Brahma Vidyā.

Pārāśarya Vyāsa or Veda Vyāsa (11180-11050 BCE)
Veda Vyāsa was the son of Parāśara. Bhāgavata Purāṇa refers to two Vyāsas. One Vyāsa was born to a dancing girl and another Vyāsa was born to a Matsya-kanyā (Satyavati). Purāṇas (Vishnu, Vāyu, Kūrma and Brahmāṇḍa) refer to twenty-eight Vyāsas. Brahmāṇḍa and Kūrma Purāṇas give the list of twenty-eight Vyāsas born in every Dvāpara Yuga of Vaivasvata Manvantara.[2]

	Brahmāṇḍa Purāṇa	Kūrma Purāṇa
1.	Svāyambhuva Manu	Svāyambhuva Manu
2.	Prajāpati	Prajāpati
3.	Uśanā	Uśanā
4.	Brihaspati	Brihaspati
5.	Savitā	Savitā
6.	Mrityu	Mrityu
7.	Indra	Indra
8.	Vasiṣṭha	Vasiṣṭha
9.	Sārasvata	Sārasvata
10.	Tridhāma	Tridhāma
11.	Trivarṣā	Riṣabha
12.	Sanadvāja	Sutejas
13.	Antarikśa	Dharma
14.	Dharma	Suchakśu
15.	Traiyyāruṇi	Traiyyāruṇi
16.	Dhanañjaya	Dhanañjaya
17.	Kritañjaya	Kritañjaya
18.	Rijīṣa	Ritañjaya
19.	Bharadwāja	Bharadwāja
20.	Gautama	Gautama
21.	Uttama	Vājaśravas
22.	Haryavana	Nārāyaṇa
23.	Vena	Triṇabindu
24.	Vājaśravas	Vālmīki
25.	Arvāk	Śakti
26.	Soma-Mukhyāyana	Parāśara
27.	Triṇabindu	Jātūkarṇya
28.	Tataja	Krishna Dvaipāyana
29.	Śakti	
30.	Parāśara	
31.	Jātūkarṇya	
32 .	Dvaipāyana	

Though Brahmanda Purāṇa refers to twenty-eight Vyāsas, it gives the names of thirty-two Vyāsas. It also states that Droni Ashvatthāmā will be a future Vyāsa. Kurma Purāna gives a list of twenty-eight Vyāsas. This list has a chronological error. Shakti and his son Parāśara were the contemporaries of Kārtavīryārjuna (11225 BCE). Therefore, they cannot be placed at the end of the list – whether of twenty-eight or thirty-two Vyāsas. Seemingly, the idea of twenty-eight or thirty-two Vyāsas evolved during the Gupta period. But all one can say with certainty is that there were at least three Vyāsas. Vyāsa I was the son of Parāśara and the grandson of Śakti. He was probably the disciple of Devarāta, Jātūkarṇya and Viśvaksena. He was the son of a dancing girl. He was probably born on a Dvīpa (island in the middle of Yamuna River), as he was also known as Krishna Dvaipāyana. He lived around 11180-11050 BCE. Vyāsa II was Bādarāyaṇa Vyāsa (10900 BCE) who authored the earliest Brahma Sūtras of Vedānta Darśana. Vyāsa III was the son of Matsya-kanyā Satyavati and Rishi Parāśara II. He was the famous author of the Mahābhārata and eighteen Purāṇas and lived during the Mahābhārata era.

Veda Vyāsa had five disciples: Paila, Vaiśampāyana, Jaimini, Sumantu Muni and Romaharṣaṇa. He compiled Vedic hymns into four distinct volumes. He taught Rigveda to Paila, Yajurveda to Vaiśampāyana, Sāmaveda to Jaimini and Atharvaveda to Sumantu. Veda Vyāsa also compiled a Paurāṇika Saṁhitā and taught it to Romaharṣaṇa.

Romaharṣaṇa belonged to the clan of Sūtas. The Sūtas and Māgadhas were traditionally entrusted to maintain the historical account and genealogical tables. Romaharṣaṇa wrote a Saṁhitā named Romaharṣaṇikā. He had six disciples: Sumati, Agnivarchas, Mitrayu, Śaṁsapāyana, Akritavarṇa (Kaśyapa) and Sāvarṇi. It is probable that all of them wrote Paurāṇika Saṁhitās. Thus, Vyāsa I and his disciple Romaharṣaṇa were the earliest historians who introduced the formal writing of history and genealogy around 11100 BCE.

The Traditions of Rigveda After Veda Vyāsa and His Disciple Paila

Śaunaka's Charaṇa Vyūha Sūtra tells us that Rigveda has eight branches, namely, Śākala, Bāṣkala, Aitareya Brāhmaṇa, Aitareya Āraṇyaka, Śāṅkhāyana (also known as Sāṅkhya), Māṇḍūka, Kauṣītakī Brāhmaṇa and

Kauṣītakī Āraṇyaka. Rigveda's Pārāyaṇa tradition has eight pāṭhas: Jatā, Mālā, Śikhā, Rekhā, Dhvaja, Danḍa, Ratha and Ghana. These Pārāyaṇas also have five branches: Āśvalāyanī, Śāṅkhāyanī, Śākalā, Bāṣkalā and Mānḍūkāyana.

Today, only Śākala and Bāṣkala branches are available. Anukramaṇī of Bāṣkala branch states that Gautama was the teacher of Auśija Kutsa and Rishi Parucchẹpa was the teacher of Para Atnāra. Dīrghatamā studied under Kutsa. Thus, Gautama, Pārucchẹpa, Auśija Kutsa, Para Atnāra and Dīrgatamā were the earliest achāryas of the Bāṣkala branch.

गौतमादौशिजः कुत्सः पारुच्छेपादृषेः परः ।
कुत्सदीर्घतमेत्येवम् बाष्कलाध्ययने क्रमः ॥

Bhāgavata Purāṇa relates that Paila, the disciple of Veda Vyāsa, taught three pāthas of Rigveda to Indrapramiti. Indrapramiti taught four pāthas of Rigveda to his six disciples, Bāṣkala, Agnimitra and the rest, as well as his son Mānḍūkeya. Mānḍūkeya's disciple was Vedamitra. Vedamitra's son was Saubhari. Saubhari's son was Śākalya. Śākalya taught five pāthas (Saṁhitā, Pada, Krama, Jatā and Danḍa) to his five disciples, Vātsya, Mudgala, Śāliya, Gokhalya and Śiśira. Śākalya was the founder of the Śākala branch of Rigveda. Jātūkarṇya, the disciple of Śākalya, wrote Nirukta on Saṁhitā and taught it to Balāka, Paija, Vaitāla and Virāja. Bāṣkala's son Bāṣkali compiled Bālakhilya Saṁhitā and taught it to Bālāyani.

Aitareya Brāhmaṇa, Aitareya Āraṇyaka and Aitareya Upaniṣad (9300-9184 BCE)

Rishi Mahīdāsa Aitareya was the author of Aitareya Brāhmaṇa, Aitareya Āraṇyaka and Aitareya Upaniṣad of the Śākala branch of Rigveda. He was the son of a rishi and his mother was Itarā. Chạndogyopaniṣad and Jaiminīya Upaniṣad mention that Mahīdāsa Aitareya lived for 116 years (twenty-four years as a student, forty-four years as a Grihastha and forty-eight years as a Vānaprastha).[3] Aitareya Brāhmaṇa speaks of the transition of winter solstice from Mrigaśirā Nakśatra to Rohiṇī Nakśatra.[4] This astronomical event occurred around 10200 BCE. Aitareya Brāhmaṇa was written before Śatapatha Brāhmaṇa (8800 BCE) and Taittirīya Brāhmaṇa

(8800 BCE). Therefore, Mahīdāsa Aitareya can be dated around 9300-9184 BCE.

Aitareya Brāhmaṇa mentions that the Bharatas, the Kuru-Pāñchālas with the Vachas and the Uśīnaras are the inhabitants of the middle country.[5] The Sātvatas were living in the southern direction (probably, close to Matsya janapada) under the rule of Bhojas. Aitareya Brāhmaṇa also lists the following rishis and kings who were contemporaries.[6]

	Vedic Kings	**The Vedic Rishi who performed Aindra Mahābhiṣeka**
1.	**Janamejaya Pārīkśita (11270 BCE)**, Kuru king of Āsandīvat city (Asand of Hisar, Haryana).	Tura Kāvaśeya
2.	**Śāryāta Mānava (11225 BCE)**, King of **Ānarta**	Chyavana Bhārgava (11240 BCE)
3.	**Śatānīka, son of Satrajit (11050 BCE)** [Satrajit's daughter Satyabhāmā married Devakīputra Krishna who was the disciple of Ghora Āṅgirasa.]	Somaśuṣmā Vājaratnāyana
4.	**King Āmbaṣṭya (11200 BCE)**	Parvata and Nārada (11200 BCE)
5.	**King Yudhāṁśrauṣṭi, son of Ugrasena (11200 BCE)**	Parvata and Nārada
6.	**Viśvakarmā, son of Bhuvana (11250 BCE)**	Kaśyapa
7.	**Sudāsa Paijavana (11275 BCE)**	Vasiṣṭha
8.	**Marutta Avīkśita (13550 BCE)**	Samvarta Āṅgirasa
9.	**King Aṅga II (11100 BCE)**	Udamāya Ātreya
10.	**Bharata, son of Duṣyanta (13450 BCE)**	Dīrghatamā Māmateya
11.	**Durmukha (11150 BCE)**	Brihaduktha, son of Vāmadeva

Aitareya Brāhmaṇa also mentions the following kings and rishis.[7]

	Vedic Kings	Contemporary Vedic Rishis
1.	**Viśvantara Sauśadmana** (11175 BCE)	Rāma Bhārgaveya (Paraśurama)
2.	**Janamejaya** Pārikshita (11270 BCE)	Tura Kāvaśeya
3.	**Somaka** Son of Sahadeva (11200 BCE)	Parvata and Nārada
4.	**Sahadeva** Son of Srinjaya (11200 BCE)	Parvata and Nārada
5.	**Babhru** Son of Devavriddha (11200 BCE)	Parvata and Nārada
6.	**Bhima** King of Vaidarbha (11200 BCE)	Parvata and Nārada
7.	**Nagnajit** Son of Gāndhāra (11200 BCE)	Parvata and Nārada
8.	**Sanaśruta** Son of Arindama (11125 BCE)	Rishi Agni
9.	**Kratuvid** Son of King Janaka (11125 BCE)	
10.	**Sudāsa** Son of Pijavana (11270 BCE)	Vasiṣṭha

Interestingly, Aitareya Brāhmaṇa is the earliest text that refers to four Yugas, Kali, Dvāpara, Tretā and Krita. It appears that Aitareya follows the twenty-year cycle of four five-year Yugas. Thus, Kali, Dvāpara, Tretā and Krita were the names of the four five-year Yugas during the time of Mahīdāsa Aitareya.[8]

Kauṣītakī or Śāṅkhāyana Brāhmaṇa, Āraṇyaka and Kauṣītakī Upaniṣad (9000 BCE)

Kauṣītakī or Śāṅkhāyana belonged to the Bāṣkala branch of Rigveda. Śāṅkhāyana Āraṇyaka gives the genealogy of the Śāṅkhāyana branch (अथ वंशः। नमो ब्रह्मणे। नम आचार्येभ्यो गुणाख्याच्छाङ्खायनादस्माभिरधीतं गुणाख्यः शाङ्खायनः कहोलात् कौषीतकेः कहोलः कौषीतकिरुद्दालकादाररुणेरुद्दाल आरुणिः). Uddālaka Āruṇi was the Āchārya of Kauṣītakī. Kahola was the disciple of Kauṣītakī. Śāṅkhāyana was the disciple of Kahola. Interestingly, Śāṅkhāyana Āraṇyaka indicates that there were two Uddālakas and it differentiates between Uddālaka and Uddālaka Āruṇi. The genealogy of Guṇākhya Śāṅkhāyana is given in Śāṇkhāyana Āraṇyaka [9]

		In CE
1.	Brahma III	11250 BCE
2.	Prajāpati	11225 BCE

3.	Indra	11210 BCE
4.	Viśvāmitra	11200 BCE
5.	Devarāta	11190 BCE
6.	Vyāsa	11180 BCE
7.	Viśvamanā	11170 BCE
8.	Uddālaka I	11160 BCE
9.	Sumanyu	11130 BCE
10.	Brihaddiva	11100 BCE
11.	Prativeśya	11070 BCE
12.	Soma Prātiveśya	11030 BCE
13.	Somapa	11000 BCE
14.	Priyavrata Saumapi	10960 BCE
15.	**Uddālaka II Āruṇi**	**10920 BCE**
16.	**Kauṣītakī**	**10880 BCE**
17.	**Kahola**	**10850 BCE**
18.	**Śāṅkhāyana**	**10800 BCE**

It seems, Śāṅkhāyanas, the disciples of Śāṅkhāyana lineage of the Bāṣkala branch, had recompiled Brāhmaṇa, Āraṇyaka and Upaniṣad around 9000 BCE. Śāṅkhāyana or Kauṣītakī Brāhmaṇa indicates the occurrence of autumnal equinox on Māgha Amāvāsyā.[10] This internal astronomical evidence suggests that Śāṅkhāyana or Kauṣītakī Brāhmaṇa was written around 9000 BCE. The autumnal equinox occurred on Māgha Amāvāsyā during the period 9000-8500 BCE.

Vaiśampāyana (11100-11050 BCE)

Vaiśampāyana was the disciple of Veda Vyāsa, or Vyāsa I. He studied Yajurveda from Veda Vyāsa. According to the Mahābhārata, Vaiśampāyana was the maternal uncle of Yājñavalkya, the author of Śatapatha Brāhmaṇa (ततः शतपथं कृत्स्नं सरहस्यं ससंग्रहम्, चक्रे सपरिशेषं च हर्षेण परमेण ह । कृत्वा चाध्ययनं तेषां शिष्याणां शतमुत्तमम्, विप्रियार्थं सशिष्यस्य मातुलस्य महात्मनः ।।). Yājñavalkya had a dispute with his guru Vaiśampāyana. Thus, Yājñavalkya became the founder of Śukla Yajurveda or Vājasaneya Saṁhitā. Tittiri or Tittiris, the disciples of Vaiśampāyana, were the authors of Taittirīya

Saṁhitā (Krishna Yajurveda). Thus, Krishna Yajurveda and Śukla Yajurveda came into existence around 11050-11000 BCE. Vaiśampayana's disciples were also known as Charakas.

The Traditions of Yajurveda After Vaiśampāyana

The ancient Yajurveda had only one tradition but it had 100 recensions. This ancient Yajurveda tradition had been divided into two separate traditions known as Brahma Sāmpradāya, i.e., Krishna Yajurveda (founded by Tittiris, the disciples of Vaiśampāyana) and Āditya Sampradāya, i.e., Śukla Yajurveda (founded by Vājasaneya Yājñavalkya) around 11050-11000 BCE. Thereafter, Krishna Yajurveda had eighty-six recensions, whereas Śukla Yajurveda had fifteen.

Veda Vyāsa taught Yajurveda to Vaiśampāyana. While commenting on the Sūtras of Pāṇini (*Kalāpi-Vaiśampāyanāntevāsibhyaścha*, *Katha-Charakālluk*), Jñānedra Sarasvati, the author of *Tattvabodhinī* (a commentary on *Siddhānta Kaumudī*) mentions that Vaiśampāyana had nine disciples: Ālambi, Kaliṅga, Kamala, Richābha, Āruṇi, Tāṇḍya, Śyāmāyana, Katha and Kalāpi. The following twenty-seven branches of Krishna Yajurveda came into existence after Vaiśampāyana.

The Branches of Krishna Yajurveda

	Vaiśampāyana's Disciples		**Kathas (12)**		**Kālāpas (4)**
1.	Ālambi	1.	Charakas	15.	Dundubhas
2.	Kaliṅga	2.	Ahvārakas	16.	Aikeyas
3.	Kamala	3.	Bhrājiṣṭhala-kathas	17.	Hāridravīyas
4.	Richābha	4.	Prāchyakathas	18.	Śyāmas
5.	Āruṇi	5.	Kapiṣṭhala-kathas	19	Śyāmāyanīyas
6.	Tāṇḍya	6.	Vārāyaṇīyas	20.	Chāgalinas
7.	Śyāmāyana	7.	Chārāyaṇīyas	21.	Taumburuvins
8.	Katha	8.	Śvetas	22.	Aulupins
9.	Kalāpi	9.	Śvetāśvataras		**Hāridravīyas (5)**
		10.	Aumanyavas	23.	Āsurins
		11.	Pātāndineyas	24.	Gārgyas
		12.	**Maitrāyaṇīyas (7)**	25.	Śārkarākśyas
		13.	Mānavas	26.	Mārgas
		14.	Vārāhas	27.	Vāsavīyas

Fifteen Recensions of Śukla Yajurveda:

1. Jābāla
2. Baudhāyana
3. Kāṇva
4. Mādhyandineya
5. Śāpheya
6. Tāpanīya
7. Kapola
8. Paundaravatsa
9. Avatika
10. Paramāvatika
11. Pārāśara
12. Vaineya
13. Vaidheya
14. Addha
15. Baudheya

The following six traditions of Kalpasūtras of Śukla and Krishna Yajurvedas have also been evolved:

Śukla Yajurveda (15 Recensions)	Krishna Yajurveda (86 Recensions)
1. Kātyāyana (Kaṇvādi 15 recensions)	2. Baudhāyana (Aukheyādi 21 recensions)
	3. Āpastamba (Khāndikeyādi 21 recensions)
	4. Bhāradwāja (Charakādi 12 recensions)
	5. Hiraṇyakeśi (Mānavādi 17 recensions)
	6. Satyāṣāḍha (Gārgyādi 15 recensions)

Vājasaneya Mādhyandina Saṁhitā (11000 BCE), Śatapatha Brāhmaṇa and Brihadāraṇyaka Upaniṣad (8800-8700 BCE)

The descendants of Vājasaneya Yājñavalkya had compiled Śatapatha Brāhmaṇa around 8800-8700 BCE. Originally, Yājñavalkyas belonged to Rishi Viśvāmitra gotra. Bhāgavata Purāṇa mentions that Devarāta (Śunaḥśepa), the adopted son of Viśvāmitra, was the father of the first Yājñavalkya. There were many Yājñavalkyas. Yājñavalkya II was probably the son of Vājasani. (वाज इत्यन्नस्य नामधेयम्, अन्नं वे वाज इति श्रुतेः। वाजस्य सनिदनि यस्य महर्षेरस्ति सोऽयं वाजसनिस्तस्य पुत्रो वाजसनेय इति तस्य याज्ञवल्क्य नामधेयम् – काण्वसंहिता, भाष्योपक्रमणिका). Jaiminīya Brāhmaṇa indicates that Uddālaka was the son of Vājasani. Some scholars speculated that the authorship of the tenth chapter (*Agnirahasya*) of Śatapatha Brāhmaṇa must be attributed to Rishi Śāṇḍilya but the Mahābhārata clearly indicates

that Yājñavalkya was the author of entire Śatapatha Brāhmaṇa. Rishi Śāṇḍilya was the disciple of Rishi Atharva III (10850 BCE) and a junior contemporary of Yājñavalkya III. Yājñavalkya elaborated and formally established the theory of *Agnirahasya*. Most probably, Rishi Śāṇḍilya elaborated the theory of *Agnirahasya* founded by Yājñavalkya. There were at least three Yājñavalkyas. Yājñavalkya I (11160 BCE) was the son of Devarāta, Yājñavalkya II (11050 BCE) was the son of Vājasani and a junior contemporary of Vaiśampāyana who compiled Vājasaneya Saṁhitā, and Yājñavalkya III (10930-10830 BCE) was the son of Brahmarāta and a contemporary of King Janaka.

Śatapatha Brāhmaṇa mentions that Rishi Indrota Daivāpa Śaunka was the contemporary of Janamejaya Pārīkśita.[11] Bhimasena, Ugrasena and Śrutasena were the Pārīkśitīyas (the sons of Janamejaya). Hiraṇyanābha Kauśalya, a prince mentioned in Praśnopaniṣad, was the father of King Para Atnāra. Śatapatha Brāhmaṇa also mentions the names of King Purukutsa Aikśvāka, Āyogava King Marutta Āvīkśita, Bharata Dauṣyanti, Pāñchāla King Kraivya, Krivi King Parivakra and Matsya King Dvaitāyana. It also gives a similar account of Aindra Mahābhiṣeka of great ancient kings as given in Aitareya Brāhmaṇa. Śatapatha records that a Kuru king was opposed to the restoration of Duṣṭaritu Pauṁśāyana of his hereditary kingdom over Pāñchālas.[12] It also mentions a king of the Śviknas named Riṣabha Yajñātura.

Brihadāraṇyaka Upaniṣad is the last chapter of Śatapatha Brāhmaṇa. Yājñavalkya III (10930-10830 BCE), the husband of Maitreyi and Kātyāyani, was the contemporary of King Janaka of Videha Kingdom. Nemi (11225 BCE), the son of Ikśvāku, was the progenitor of Videha or Mithilā Kings. Gārgī Vāchaknavī debated with Yājñavalkya in the court of King Janaka. Aśvala, the progenitor of Āśvalāyana gotra, was the priest of King Janaka. Arthabhāga, Bhujyu, Uṣastā and Uddālaka Āruṇi had also participated in the debate. Brihadāraṇyaka Upaniṣad narrates this historical story of Yājñavalkya III (10930-10830 BCE). Therefore, Yājñavalkya IV, the descendant of Yājñavalkya III, compiled Śatapatha Brāhmaṇa and Brihadāraṇyaka Upaniṣad around 8800-8700 BCE. Interestingly, Yājñavalkya IV's guruparamparā of Yajurveda tradition has

been given in Brihadāraṇyaka Upaniṣad. We can arrive at the chronology of guruparamparā starting from Ayāsya Āṅgirasa.

	Guruparamparā of Yājñavalkya IV	**In CE**
1.	Brahma II	14500-13600 BCE (nos. 1–15)
2.	Prajāpati Parameṣṭhī	
3.	Sanaga	
4.	Sanātana	
5.	Sanāru	
6.	Vyaṣṭi	
7.	Viprachitti	
8.	Ekarshi	
9.	Pradhvaṁsana	
10.	Mrityu Prādhvaṁsana	
11.	Atharvā Daiva (13700 BCE)	
12.	Dadhyaṅg I Ātharvaṇa (13650 BCE)	
13.	Aśvinī Kumāras (13600 BCE)	
14.	Viśvarūpa Tvāṣṭra (13600 BCE)	
15.	Ābhūti	
16.	Ayāsya Āṅgirasa	11250-11200 BCE
17.	Panthā Saubhari	11150 BCE
18.	Vatsanapāt Bhābhrava	11050 BCE
19.	Vaidarbhi Kauṇḍinya	11000 BCE
20.	Gālava	10950 BCE
21.	Kumāra Hārīta	10900 BCE
22.	Kaiśorya Kāpya	10850 BCE
23.	Śāṇḍilya I	10800 BCE
24.	Vātsya	10750 BCE
25.	Gautama I	10700 BCE
26.	Gautama II	10625 BCE
27.	Mānti	10550 BCE
28.	Ātreya	10475 BCE

29.	Bhāradwāja I	10400 BCE
30.	Āsuri	10325 BCE
31.	Aupajandhani	10250 BCE
32.	Traivani	10175 BCE
33.	Āsurāyaṇa Yāska	10100 BCE
34.	Jātūkarṇya	10025 BCE
35.	Pārāśarya II	9950 BCE
36.	Pārāśaryāyaṇa	9875 BCE
37.	Ghritakauśika	9800 BCE
38.	Kauśikāyani	9750 BCE
39.	Vaijavāpāyana	9700 BCE
40.	Pārāśarya III	9650 BCE
41.	Bhāradwāja II	9600 BCE
42.	Gautama III	9550 BCE
43.	Bhāradwāja III	9500 BCE
44.	Pārāśarya III	9450 BCE
45.	Saitava Prāchīnayogya	9400 BCE
46.	Gautama IV	9350 BCE
47.	Anabhimlāta	9300 BCE
48.	Anabhimlāta Śāṇḍilya	9250 BCE
49.	Agniveśya	9200 BCE
50.	Gautama V and Kauśika I	9150 BCE
51.	Śāṇḍilya II	9100 BCE
52.	Kaunḍinya	9050 BCE
53.	Kauśika II	9000 BCE
54.	Gaupavana I	8950 BCE
55.	Pautimāṣya I	8900 BCE
56.	Gaupavana II	8850 BCE
57.	Pautimāṣya II	8800 BCE
58 .	Yājñavalkya IV	8800-8700 BCE

Śatapatha Brāhmaṇa refers to the following verifiable astronomical events:

1. **Krittikās do not deviate from the East whereas all other Nakśatras do move from the East.[13]**

Yājñavalkya observed that Krittikās do not deviate from the East whereas all other Nakśatras do move from the East. Seemingly, Vedic Rishis started observing the right ascension of all Nakśatras when the winter solstice had shifted to Krittikā around 9200 BCE. The Rishis of the period 9200-8700 BCE had carefully observed the right ascension and declination (RA/Dec) of all twenty-eight Nakśatras and found that Krittikās do not deviate from the right ascension, whereas all other Nakśatras do move from their right ascension. The same fact is recorded in Śatapatha Brāhmaṇa. Most probably, the rishis measured the right ascension from the Sun at the autumnal equinox. The right ascension and declination of star eta Tauri of Kriitikā constellation was at 17h 45m 10.93s / -20°52'45.8" on 25th Nov 9200 BCE, at 17h 59m 42.44s / -20°55'46.7" on 24th Nov 8950 BCE and at 18h 14m 13.79s / -20°53'22.1" on 22nd Nov 8700 BCE. Evidently, the right ascension of Krittikā was constant and did not deviate much around 9200-8700 BCE whereas that of all other Nakśatras had deviated. Though the right ascension and declination of star delta Sco of Anurādhā constellation was also comparably constant at 5h 52m 59.48s / +23°19'50.8"on 25th Nov 9200 BCE, at 6h 10m 45.61s / +23°18'45.5" on 24th Nov 8950 BCE and at 6h 25m 32.84s / +23°11'46.6" on 22nd Nov 8700 BCE, it deviated more than that of Krittikā. This may be the reason why the rishis of the period 9200-8700 BCE had observed that Krittikās do not deviate from the East. Sh. SB Dikshit argued that Krittikās were at celestial equator during the period of Śatapatha Brāhmaṇa; therefore, Śatapatha must be dated around 3000 BCE. However, the astronomical reference of Śatapatha (Krittikās do not deviate from the East whereas all other Nakśatras do move from the East) is a multigenerational observation and not an observation made in the lifetime of one person. Moreover, some other Nakśatras were also on celestial equator around 3000-2900 BCE. Many Nakśatras, including Krittikās, were periodically at celestial equator. Therefore, the astronomical statement of Śatapatha Brāhmaṇa does not indicate the position of Krittikās at celestial equator.

2. The Saptarṣis rise in the North since ancient times.[14]

The statement of "*Purā ethāḥ*" clearly indicates that Vedic Rishis traditionally observed Saptarṣis as the northern circumpolar constellation since the beginning of early Rigvedic period, around 14000 BCE. Therefore, Śatapatha Brāhmaṇa records that Saptarṣis rise in the North since ancient times.

3. The occurrence of Vaiśākha Amāvāsyā at Rohiṇī Nakśatra.[15]

Vaiśākha Amāvāsyā occurred at Rohiṇī Nakśatra during the time of Yājñavalkya. This event can be explained around 9100-8500 BCE.

4. Śatapatha Brāhmaṇa and Kauṣītakī Brāhmaṇa indicate the beginning of Saṁvatsara or New Year from the full moon day of Phālguna month.[16]

The Amānta Saṁvatsara began on Māgha Śukla Pratipadā and the Pūrṇimānta Saṁvatsara began on Phālguna Paurṇamāsī. Though the month was Māgha but the full moon day was at Phālguni Nakśatra due to intercalation of second Puṣya month in the fifth year of five-year Yuga cycle.

5. The construction of Yajñavedi based on astronomy.

The eighth Kānda of Śatapatha Brāhmaṇa describes the construction of a Yajñavedi in five layers with twenty-nine bricks on the outer rim as representation of the solar orbit. Dr. Subhash Kak has established that the arrangement of the bricks suggests a division of the year into two halves of 189 days and 176 days. In his words, "If one assumes that the two halves of the year are directly in proportion to the brick counts of fourteen and fifteen in the two halves of the ring of the Sun, this corresponds to day counts of 176 and 189. This division appears to have been for the two halves of the year with respect to the equinoxes if we note that the solstices divide the year into counts of 181 and 184."[17] He also says that "Śatapatha Brāhmaṇa describes the total number of Yājuṣmatī bricks to be 395.[18] This was to be taken as 360 days of the year and thirty-six additional (including one being the fillings between the bricks) as the days of the intercalary month. By layers, the first has ninety-eight, the second has forty-one, the third has seventy-one, the fourth has forty-seven and the fifth has 138. The sum of the bricks in the fourth and the fifth layers refer to the 186 (together with the one space filling) tithis in the half year."

Sh. K Chandra Hari explained in his article titled "Date of The Solar Orbit of Śatapatha Brāhmaṇa" that the 189/176 days division of the year was possible in the past only in either 4000 BC or 1000 AD. However, the same was also possible around 8800-8700 BCE; therefore, the date of Śatapatha Brāhmaṇa can be fixed around 8800-8700 BCE.

Dr. Subhash Kak has also explained that "the apparent motion of the Sun is the greatest when the Earth is at perihelion and the least when the Earth is at aphelion. Currently, this speed is greatest in January. The interval between successive perihelia, the anomalistic year, is 365.25964 days, which is 0.01845 days longer than the tropical year on which our calendar is based. In 2000 calendar years, the date of the perihelion advances almost 35 days; in 10000 years, it advances almost a half-year (175 days). This means that the perihelion movement has a cycle of about 20000 years."

All Vedas clearly indicate the beginning of Saṁvatsara from Śarad season (autumn) during later Vedic period. Śatapatha Brāhmaṇa also follows the same tradition. Brāhmaṇa texts refer to Viṣuvat (equinox) but many scholars mistakenly interpreted it as solstice. The sum of the bricks in the fourth layer (forty-seven) and the fifth layer (138) of Yajñavedi as given in Śatapatha refer to the 185 or 186 (together with the one space filling) tithis in the half year. Therefore, the following data of number of days in half years clearly validates the date of Śatapatha Brāhmaṇa to be around 8800-8700 BCE.

In CE	AE to VE	VE to AE	WS to SS	SS to WS
1000 CE	179.35	185.87	182.92	182.33
0 CE	178.84	186.42	184.11	181.14
1000 BCE	179.37	185.88	185.21	180.04
2000 BCE	180.19	185.04	186.08	179.17
3000 BCE	181.29	183.96	186.71	178.54
4000 BCE	182.51	182.73	186.98	178.26
5000 BCE	182.17	183.08	186.48	178.76
6000 BCE	183.09	182.15	186.48	178.75
7000 BCE	184.00	181.25	186.25	179.00

8000 BCE	184.80	180.44	185.84	179.41
8800 BCE	**185.37**	**179.88**	**185.37**	**179.88**
9000 BCE	**185.51**	**179.72**	**185.24**	**180.01**
10000 BCE	186.02	179.22	184.46	180.77
11000 BCE	186.35	178.88	183.62	181.63
11300 BCE	186.46	178.79	183.35	181.90
12000 BCE	186.50	178.74	182.71	182.54
13000 BCE	187.42	178.84	181.79	183.46
14000 BCE	186.11	179.13	180.92	184.34

The Yājñavalkya Cycle of 95 Years

According to Dr. Subhash Kak, Śatapatha Brāhmaṇa prescribes that ninety-five fire altars be built in a sequence, defining a ninety-five-year cycle of intercalation. He named the ninety-five-year cycle as "Yājñavalkya Cycle".[19] He also says that Agnichayana ritual leads to a cycle of ninety-five years. The logic behind this cycle is that this leads to exactly thirty-five intercalary months (with a residual small error) in ninety-five years. This cycle of ninety-five-years is based on the traditional five-year Yuga cycle. The ninety-five-year cycle corresponds to the tropical year being equal to 365.24675 days.

Traditional Vedic calendar of five-year Yuga had two intercalations (Āṣāḍha and Pauṣa months). Aitareya Brāhmaṇa indicates a cycle of twenty years (Kali, Dvāpara, Tretā and Krita). Probably, a pakśa (fortnight) was dropped from one intercalary month out of eight intercalary months in a cycle of twenty years. Śatapatha Brāhmaṇa describes a thirty-year long Dākśāyaṇīya ritual. KD Abhyankar explains: "It would have been decided to have a simple rule of introducing an intercalary month after every thirty months. But this would introduce too many intercalary months and it would be necessary to drop an Adhikamāsa. It was found that there was a difference of about one Nakśatra in the position of the Sun after fifteen years, which indicated that one should drop one pakśa (fortnight) after fifteen years. Hence the Dākśāyaṇīya sacrificial calendar used amānta months during the first fifteen years and then changed over to Pūrṇimānta months by dropping one Krishna pakśa. After another

fifteen years one reverted to the Amānta months by dropping one Śukla pakśa. In this way one had eleven intercalary months in a period of thirty years, which was fairly accurate."[20]

Most probably, Yājñavalkya Vājasaneya found that the cycle of thirty years is not accurate enough because it falls short of one intercalary month in a period of 570 years. Therefore, Yājñavalkya introduced a cycle of ninety-five years. This cycle had total thirty-five intercalary months. Thus, six cycles of ninety-five years, or 570 years, had 210 intercalary months whereas nineteen cycles of thirty years, or 570 years, had only 209 intercalary months. Interestingly, the cycle of ninety-five years consisted of five cycles of nineteen years. Thus, Yājñavalkya III (10930-10830 BCE) invented a perfect lunisolar calendar of ninety-five-year cycle (with a residual small error).

This Yājñavalkya cycle of ninety-five years consisted of one cycle of five years with two intercalary months and three cycles of thirty years with thirty-three intercalary months. Since the ninety-five-year cycle had a residual small error, ancient Lomaśa (Romaka) Siddhānta had probably proposed the intercalation of one additional month after completion of 2850 years. Seventeen astronomical Siddhāntas (Paitāmaha, Vyāsa, Vasiṣṭha, Atri, Pārāśara, Kaśyapa, Nārada, Gārgya, Marīchi, Manu, Aṅgiras, Lomaśa (Romaśa or Romaka), Pulaha, Pulastya, Chyavana, Brigu and Śaunaka) came into existence mainly due to the difference of opinion in the methodology of intercalation and Kśayamāsas.

I have attempted to reconstruct the Vedic calendar based on the Yājñavalkya cycle of ninety-five years (5+30+30+30) starting from the beginning of Vaivasvata Manvantara (11300-11200 BCE) up to the epoch of the Kaliyuga of Lātadeva's Sūrya Siddhānta (3101 BCE). It is difficult to explain whether the cycle of ninety-five years had followed three sub cycles in order of 35+30+30 or 30+30+35 but I have assumed the order of 35+30+30. I have also incorporated an additional intercalary month at the end of the cycle of 2850 years of Romaka Siddhānta. Later Vedic New Year had commenced from Śarad season (autumnal equinox) but the first day of the New Year continued to commence on Māgha Śukla Pratipadā and Śraviṣṭhā (Dhaniṣṭhā) Nakśatra. Initially, autumnal equinox took place in

the first month of New Year but, later, winter solstice occurred in the first month of New Year starting from 4392 BCE onwards.

New year day of the cycle	Year	From (Julian Day)	To (Julian Day)	No of Days
23 Nov	11327 BCE	-2415802	-2381105	34698
22 Nov	11232 BCE	-2381104	-2346407	34698
22 Nov	11137 BCE	-2346406	-2311708	34699
22 Nov	11042 BCE	-2311707	-2277009	34699
22 Nov	10947 BCE	-2277008	-2242311	34698
21 Nov	10852 BCE	-2242310	-2207613	34698
21 Nov	10757 BCE	-2207612	-2172914	34699
21 Nov	10662 BCE	-2172913	-2138215	34699
21 Nov	10567 BCE	-2138214	-2103517	34698
20 Nov	10472 BCE	-2103516	-2068819	34698
20 Nov	10377 BCE	-2068818	-2034120	34699
20 Nov	10282 BCE	-2034119	-1999421	34699
20 Nov	10187 BCE	-1999420	-1964723	34698
19 Nov	10092 BCE	-1964722	-1930025	34698
19 Nov	9997 BCE	-1930024	-1895326	34699
19 Nov	9902 BCE	-1895325	-1860628	34698
18 Nov	9807 BCE	-1860627	-1825929	34699
18 Nov	9712 BCE	-1825928	-1791231	34698
18 Nov	9617 BCE	-1791230	-1756532	34699
18 Nov	9522 BCE	-1756531	-1721834	34698
17 Nov	9427 BCE	-1721833	-1687135	34699
17 Nov	9332 BCE	-1687134	-1652437	34698
17 Nov	9237 BCE	-1652436	-1617738	34699
17 Nov	9142 BCE	-1617737	-1583040	34698
16 Nov	9047 BCE	-1583039	-1548341	34699
16 Nov	8952 BCE	-1548340	-1513643	34698
16 Nov	8857 BCE	-1513642	-1478944	34699
16 Nov	8762 BCE	-1478943	-1444246	34698

15 Nov	8667 BCE	-1444245	-1409547	34699
15 Nov	8572 BCE	-1409546	-1374849	34698
15 Nov	8477 BCE	-1374848	-1340150	34699
15 Nov	8382 BCE	-1340149	-1305452	34698
14 Nov	8287 BCE	-1305451	-1270753	34699
14 Nov	8192 BCE	-1270752	-1236055	34698
14 Nov	8097 BCE	-1236054	-1201356	34699
14 Nov	8002 BCE	-1201355	-1166658	34698
13 Nov	7907 BCE	-1166657	-1131959	34699
13 Nov	7812 BCE	-1131958	-1097261	34698
13 Nov	7717 BCE	-1097260	-1062562	34699
13 Nov	7622 BCE	-1062561	-1027864	34698
12 Nov	7527 BCE	-1027863	-993165	34699
12 Nov	7432 BCE	-993164	-958467	34698
12 Nov	**7337 BCE**	**-958466**	**-923740**	**34727**
10 Dec	7242 BCE	-923739	-889041	34699
10 Dec	7147 BCE	-889040	-854342	34699
10 Dec	7052 BCE	-854341	-819644	34698
10 Dec	6957 BCE	-819643	-784946	34698
9 Dec	6862 BCE	-784945	-750247	34699
9 Dec	6767 BCE	-750246	-715548	34699
9 Dec	6672 BCE	-715547	-680850	34698
9 Dec	6577 BCE	-680849	-646152	34698
8 Dec	6482 BCE	-646151	-611453	34699
8 Dec	6387 BCE	-611452	-576754	34699
8 Dec	6292 BCE	-576753	-542056	34698
8 Dec	6197 BCE	-542055	-507358	34698
7 Dec	6102 BCE	-507357	-472659	34699
7 Dec	6007 BCE	-472658	-437960	34699
7 Dec	5912 BCE	-437959	-403262	34698
7 Dec	5817 BCE	-403261	-368564	34698

6 Dec	5722 BCE	-368563	-333865	34699
6 Dec	5627 BCE	-333864	-299166	34699
6 Dec	5532 BCE	-299165	-264468	34698
6 Dec	5437 BCE	-264467	-229770	34698
5 Dec	5342 BCE	-229769	-195071	34699
5 Dec	5247 BCE	-195070	-160372	34699
5 Dec	5152 BCE	-160371	-125674	34698
5 Dec	5057 BCE	-125673	-90976	34698
4 Dec	4962 BCE	-90975	-56277	34699
4 Dec	4867 BCE	-56276	-21579	34698
3 Dec	4772 BCE	-21578	13118	34698
3 Dec	4677 BCE	13119	47817	34699
3 Dec	4582 BCE	47818	82516	34699
3 Dec	**4487 BCE**	**82517**	**117243**	**34727**
31 Dec	4392 BCE	117244	151941	34698
31 Dec	4297 BCE	151942	186640	34699
31 Dec	4202 BCE	186641	221339	34699
31 Dec	4107 BCE	221340	256037	34698
30 Dec	4012 BCE	256038	290735	34698
30 Dec	3917 BCE	290736	325434	34699
30 Dec	3822 BCE	325435	360133	34699
30 Dec	3727 BCE	360134	394831	34698
29 Dec	3632 BCE	394832	429529	34698
29 Dec	3537 BCE	429530	464228	34699
29 Dec	3442 BCE	464229	498927	34699
29 Dec	3347 BCE	498928	533625	34698
28 Dec	3252 BCE	533626	568323	34698
28 Dec	3157 BCE	568324	603022	34699
28 Dec	3062 BCE	603023		

Evidently, there are 34698.5 days in the cycle of ninety-five years and 1040953 days in the cycle of 2850 years. Thus, the ninety-five-year

cycle corresponds to the tropical year being equal to 365.247368 days and the cycle of 2850 years corresponds to the tropical year being equal to 365.246667 days. If we add an additional intercalary month at the end of the cycle of 2850 years, the total number of days would be 1040983, which corresponds to the sidereal year being equal to 365.257193 days.

The Date of Old Lomaśa (Romaka) Siddhānta (7300-6800 BCE) and the Saptarṣi Cycle (6777 BCE) of Paitāmaha Siddhānta

Rishi Lomaśa (Romaśa) was the founder of Lomaśa, Romaśa or Romaka Siddhānta. Seemingly, the word "Romaśa" was also pronounced as Romaka. The Mahābhārata indicates that Rishi Lomaśa was born in the beginning of Vaivasvata Manvantara and he was the contemporary of Arjuna (11125 BCE) of the Jaiminīya Aśvamedha era. Most probably, his descendants were also known as Lomaśas. There was also a Lomaśa Rishi during the Mahābhārata era who escorted the Pandavas on the great pilgrimage. Barabar Hills near to Gaya in Magadha have two caves known as Lomaśa and Sudāma caves. Apparently, these two caves belong to the Mahābhārata era. It appears that the disciples of Lomaśa Rishi came to be known as Ajīvikas in the post-Mahābhārata era.

Rāmāyaṇa and Yoga Vāsiṣṭha also refer to Lomaśa Rishi. According to legends, Riṣyaśriṅga cursed Vedic King Parīkśit (11050 BCE) for his sinful conduct against Rishi Lomaśa. The legends of Kākabhuśuṇḍī also refer to Lomaśa Rishi. Evidently, the descendants of Lomaśa, known as Lomaśa or Romaśa, flourished from the beginning of Vaivasvata Manvantara (11200 BCE) to the Mahābhārata era (3162 BCE). The Romaśa who introduced the cycle of 2850 years was a later descendant of Romaśa lineage and he might have lived around 7300-6800 BCE. The necessity of an additional intercalary month in the cycle of ninety-five years was envisaged around 7300-6800 BCE after 2850 years starting from 10200-10100 BCE. It seems the Vedic list of Nakśatras was reset, starting from Rohiṇī around 10200 BCE, because winter solstice was shifted from Mrigaśirā to Rohiṇī.

Evidently, the cycle of 2850 years and the Saptarṣi cycle of 2700 years were introduced before the evolution of the concept of Mahāyuga of 4320000 years. Though the cycle of 2850 years is older than the Saptarṣi cycle of 2700 years, the Saptarṣi cycle became more popular because it can

also be reconciled with the later concept of Mahāyuga of 4320000 years in integers. A Mahāyuga can be divided into 1600 cycles of 2700 years. Moreover, the cycle of 2850 years was based on the Yājñavalkya cycle (ninety-five years) whereas the Saptarṣi cycle was based on the Jovian cycle (twelve years) and the cycle of sixty years of Paitāmaha Siddhānta. The list of Nakśatras starting from Aśvinī was reset at the end of Krita Yuga (6777 BCE) because winter solstice had shifted to Aśvinī around 7200 BCE. Seemingly, the Saptarṣi cycle, the Jovian cycle and the cycle of sixty years were introduced for the first time in 6777 BCE, considering the hypothetical position of Saptarṣis at Aśvinī Nakśatra around 6777-6677 BCE. This is the reason why Saptarṣis have been assumed to be in Māgha Nakśatra during the time of the Mahābhārata War (3162 BCE).

	The Saptarṣi Cycle	**In CE**
1.	**Aśvinī**	**6777-6677 BCE**
2.	Bharaṇī	6677-6577 BCE
3.	Kṛttikā	6577-6477 BCE
4.	Rohiṇī	6477-6377 BCE
5.	Mṛgaśirā	6377-6277 BCE
6.	Ārdrā	6277-6177 BCE
7.	Punarvasū	6177-6077 BCE
8.	Puṣya	6077-5977 BCE
9.	Āśleṣa	5977-5877 BCE
10.	Maghā	5877-5777 BCE
11.	Pūrva Phālgunī	5777-5677 BCE
12.	Uttara Phālgunī	5677-5577 BCE
13.	Hasta	5577-5477 BCE
14.	Chitrā	5477-5377 BCE
15.	Svāti	5377-5277 BCE
16.	Viśākhā	5277-5177 BCE
17.	Anurādhā	5177-5077 BCE
18.	Jyeṣṭhā	5077-4977 BCE
19.	Mūla	4977-4877 BCE

20.	Pūrvāṣāḍhā	4877-4777 BCE
21.	Uttarāṣāḍhā	4777-4677 BCE
22.	Śravaṇa	4677-4577 BCE
23.	Śraviṣṭhā (Dhaniṣṭhā)	4577-4477 BCE
24.	Śatabhiṣaj	4477-4377 BCE
25.	Pūrva Bhādrapadā	4377-4277 BCE
26.	Uttara Bhādrapadā	4277-4177 BCE
27.	Revatī	4177-4077 BCE
1.	Aśvinī	4077-3977 BCE
2.	Bharaṇī	3977-3877 BCE
3.	Kṛttikā	3877-3777 BCE
4.	Rohiṇī	3777-3677 BCE
5.	Mṛgaśirā	3677-3577 BCE
6.	Ārdrā	3577-3477 BCE
7.	Punarvasū	3477-3377 BCE
8.	Puṣya	3377-3277 BCE
9.	Āśleṣa	3277-3177 BCE
10.	Maghā	**3177-3077 BCE**

Śriṣeṇa's Romaka Siddhānta and Vishnuchandra's Vasiṣṭha Siddhānta

Brahmagupta and his commentators indicate that Śriṣeṇa was the author of Romaka Siddhānta. Colebrooke's manuscript of Bramasphuta Siddhānta contains certain ślokas which clearly mention that Śriṣeṇa borrowed some rules from Lāṭadeva and Āryabhaṭa, and wrote his treatise on Romaka Siddhānta.[21] Seemingly, Śriṣeṇa presented an updated version of Romaka Siddhānta (with the concept of epicycles) but he was not the founder of this Siddhānta. Varāhamihira (146 -74 BCE) refers to a commentary on Romaka Siddhānta written by Lāṭadeva. Moreover, the Romaka Siddhānta (without the concept of epicycles) narrated by Varahamihira differs from Śriṣeṇa's Romaka Siddhānta. Evidently, Śriṣeṇa presented his Romaka Siddhānta based on old Romaka Siddhānta, like Lāṭadeva presented his Sūrya Siddhānta based on Maya's Sūrya Siddhānta. As explained earlier, ancient Lomaśa (Romaka) Siddhānta was founded around 7300-

6800 BCE and Lāṭadeva wrote his commentary on ancient Romaka Siddhānta as indicated by Varāhamihira. Undoubtedly, Śriṣeṇa lived after Aryabhata and Lāṭadeva. Therefore, Śriṣeṇa, Vishnuchandra, Pradyumna, Simha (referred to by Brahmagupta) and Vijayanandi (referred to by Varāhamihira) might have flourished around 500-300 BCE.

According to Varāhamihira, Romaka Siddhānta is a lunisolar Siddhānta based on the Chaitra Śuklādi calendar. Ancient Romaka Siddhānta followed Māgha Śuklādi calendar but later it switched to Chaitra Śuklādi calendar. According to Varāhamihira's Romaka Siddhānta, a Yuga of 2850 years comprised of 1050 adhimāsas and 16547 tithipralayas, i.e., omitted lunar days [(2850 x 12) +1050 = (35250 x 30)-16547 = 1040953] but the different kśepa quantities to be met within the rules for finding Ahargaṇa is not explained. Western Indologists speculated that Romaka Siddhānta gives 1040953 days in a Yuga of 2850 years, which implies a year of 365 days, five hours, fifty-five minutes, twenty-two seconds – agreeing with Hipparchus and Ptolemy. They also concocted a false theory that the Romaka Siddhānta is based on the tropical system based on the astronomical learning of Greece and Byzantine Rome. First of all, Romaka Siddhānta was founded in India thousands of years before the birth of Hellenistic astronomy and the foundation of Rome. Moreover, this is originally based on Vedic Yuga cycle of five years, the Yājñavalkya cycle of ninety-five years and the lunisolar calendar as explained above. Therefore, the speculation of the foreign origin of Romaka Siddhānta is totally baseless and absurd. Moreover, the so-called Metonic cycle of nineteen years is undoubtedly derived from the Yājñavalkya cycle of ninety-five years.

Yavana Siddhānta (~5000 BCE) and Pauliśa Siddhānta (~4000 BCE)

Varāhamihira (146 -74 BCE) refers to a commentary on Pauliśa Siddhānta written by Lāṭadeva in his Pañchasiddhāntikā.[22] Lāṭadeva was the disciple of Āryabhaṭa (born in 3173 BCE). He recompiled Sūrya Siddhānta considering the epoch of 3101 BCE and also authored a commentary on Pauliśa Siddhānta. Evidently, Pauliśa Siddhānta existed before the Mahābhārata era. Unfortunately, the original Sanskrit text of Pauliśa Siddhānta and the commentary of Lāṭadeva are not available today. The

word "Pauliśa" is derived from "Puliśa" – it had no connection with Pulaha or Pulastya. The Pauliśa Siddhānta as narrated by Varāhamihira follows Yavana Siddhānta (Yavanajātakam). Yavana Siddhānta claims its origin from Maya's Sūrya Siddhānta (6778 BCE) but, at present, only Sphujidhvaja's Yavanajātakam is available today.

Pauliśa Siddhānta and Sūrya Siddhānta give the length of the sidereal year as equal to 365.25875 (1577917800 / 4320000). Evidently, Lāṭadeva wrote on three Siddhāntas: Sūrya, Pauliśa and Romaka. Western scholars claim that Pauliśa Siddhānta follows Yavanajātaka but, chronologically, Lāṭadeva's commentary on Pauliśa Siddhānta is older than Yavanajātaka. We have no information about the ancient Yavana Siddhānta. Yavanas, the descendants of Turvaśa, were the original inhabitants of Bactria and Gāndhāra, since pre-Rāmāyaṇa era. They had migrated to Western Anatolia and Greece over a period of time since later Rigvedic era but the Yavanas who migrated around 5000 BCE came to be known as Ionians. These Ionians conquered Gāndhāra and Bactria under the leadership of Heracles and established their kingdom around 1900-1850 BCE. Yavaneśvara (1500 BCE), a king of Ionians, or Yavanas, wrote a Horāśāstra in Bactrian language that had been translated into Sanskrit by the Yavana King Sphujidhvaja (900 BCE). I have discussed the chronology of Bactria, Gāndhāra and Yavana kings in my book titled " *The Chronology of India : From Mahabharata to Medieval Era* ".

Yavanajātaka follows a Yuga, or an astronomical cycle, of 165 years. Undoubtedly, the cycle of 165 years is based on Vedic Yuga of five years. It is stated in Yavanajātaka that when the fifty-sixth year of the Śakas is current, on a Sunday, the beginning of that year is the beginning of the Yuga of 165 years. Considering the epoch of Śaka era in 583 BCE, the fifty-sixth year was 528-527 BCE. The date was 12th Mar 528 BCE when the conjunction of the Sun and Moon occurred at Meṣa Rāśi (Aries) on Chaitra Śukla Pratipadā.

Apparently, Yavana Siddhānta also followed the lunisolar calendar of Chaitra Śuklādi like Sūrya, Pauliśa, Romaka and Paitāmaha (Brahma) Siddhāntas. In fact, Yavanajātaka followed Pauliśa and Sūrya Siddhāntas. Therefore, Pauliśa and Romaka Siddhāntas existed in India much

before the birth of Hellenistic astronomy. Therefore, it is nonsensical to speculate the Greek origin of Pauliśa and Romaka Siddhāntas. Under the Influence of David Pingree and Western Indologists, Sh. KV Sharma also mistakenly argues, "Although the Pauliśa Siddhānta was based on a Greek original, it was painstakingly Indianised, both in matter of content and presentation." Actually, the ignorance of the true chronology led to this baseless speculation.

Taittirīya Saṁhitā (11000 BCE), Taittirīya Brāhmaṇa, Āraṇyaka and Upaniṣad (8800-8700 BCE)

Vājasaneya Yājñavalkya or Yājñavalkya II and Tittiris were the disciples of Vaiśampāyana. Vaiśampāyama was the maternal uncle of Yājñavalkya. Vaiśampāyana had to expel Yājñavalkya II from his gurukula due to his arrogant attitude. Therefore, Yājñavalkya II founded the Śukla Yajurveda tradition. Katha, Vārāyaṇa and Upamanyu, the three disciples of Vaiśampāyana, came to be known with the nickname of "Tittiris". The descendants or disciples of Tittiris came to be known as Taittirīyas. Taittirīyas had formally documented the Saṁhitā of traditional Yajurveda around 8800-8700 BCE that came to be known as Krishna Yajurveda or Taittirīya Saṁhitā.

	Vājasaneya Yājñavalkya	**Tittiris (Katha, Vārāyaṇa & Upamanyu)**
Saṁhitā	Vājasaneyī Saṁhitā	Taittirīya Saṁhitā
Brāhmaṇa	Śatapatha Brāhmaṇa	Taittirīya Brāhmaṇa
Āraṇyaka	Brihadāraṇyaka	Taittirīya Āraṇyaka
Upaniṣad	Brihadāraṇyaka and Iśāvāsya Upaniṣad	Taittirīya Upaniṣad
Prātiśākhya	Vājasaneya Prātiśākhya	Taittirīya Prātiśākhya

Astronomical References in the Works of Taittirīyas (8800-8700 BCE)

1. Taittirīya Saṁhitā gives the list of twenty-seven Nakśatras (excluding Abhijit) starting from Krittikā.[23]
2. It gives the names of six Ritus and twelve solar months as Vasanta (Madhu and Mādhava), Grīṣma (Śukra and Śuchi), Varṣā (Nabha and Nabhasya), Śarad (Iṣa and Urja), Hemanta (Sahas and Sahasya) and Śiśira (Tapas and Tapasya).[24]

3. The first mantra of Yajurveda refers to the solar months of Śarad Ritu (*Iṣe tvorje tvā vāyava…*). Many mantras of Yajurveda (*Jīvema Śaradaḥ Śatam…*) indicate the beginning of New Year from Śarad Ritu, or autumnal equinox.
4. Taittirīya Saṁhitā refers to Amānta and Pūrṇimānta schemes.[25]
5. Taittirīya Saṁhitā refers to the special status of Krittikā Nakśatra and states that all the Gods went to Krittikās. This indirectly indicates the occurrence of winter solstice at Krittikā Nakśatra.[26]
6. Taittirīya Brāhmaṇa gives the list of twenty-eight Nakśatras starting from Krittikā and classifies the Nakśatras into two groups namely Devanakśatras and Yamanakśatras.[27] The Nakśatras from Krittikā to Viśākhā (fourteen Nakśatras) were situated in the northern hemisphere (Deva) and the remaining Nakśatras, from Anurādhā to Bharaṇī (fourteen Nakśatras), were in the southern hemisphere (Yama). Evidently, winter solstice occurred at Krittikā Nakśatra and summer solstice occurred in the beginning of Anurādhā Nakśatra, during the lifetime of Tittiris. Therefore, we can roughly fix the date of Taittirīya Brāhmaṇa around 8800-8700 BCE.
7. Taittirīya Brāhmaṇa clearly indicates that the Saṁvatsara or New Year began at the end of Varṣā (rainy) season, i.e., in the beginning of Śarad (autumn) season.[28] It says: "संवत्सरस्य यत् फाल्गुनीपूर्णमासः मुखत एव सम्वत्सरम् आरभ्य दीक्षन्ते। तस्यैकैव निर्यायत् साम्मेघ्ये विषुवत् संपद्यते।". While explaining the word "साम्मेघ्यः", Sāyaṇa states: "समीचीना अतिवर्षणक्षमा मेघा यस्मिन् वर्षर्तौ सोऽयं संमेघः तस्य संबन्धी प्रत्यासन्नः कालः साम्मेघ्यः अस्मिन् काले विषुवान् अहः संपद्यते।". Seemingly, Sāyaṇa, being a South Indian, assumes the summer solstice to be Viṣuvān that occurs during the Varṣā season in South India but the summer solstice takes place at the end of summer season in North India. In my opinion, साम्मेघ्यः must be interpreted as "संपन्नाः मेघाः वर्षाः यस्मिन् तस्य संबन्धी कालः साम्मेघ्यः". Thus, Taittirīya Brāhmaṇa refers to the occurrence of autumnal equinox at the end of Varṣā season.
8. Interestingly, Taittirīya Brāhmaṇa informs us that Devas and Asuras were in a major conflict when Abhijit Nakśatra was above Āṣāḍha Nakśatras (*Upariṣṭhāt āshāḍhānām*) and Śronā (Śravaṇa) Nakśatra

was below on the other side (*avastāt Śroṇāyai*).[29] This event occurred around 12000 BCE when Abhijit (Vega) was a pole star. Purāṇas indicate that the perennial battle between Devas and Asuras began in Chākśuṣa Manvantara and ended in the beginning of Vaivasvata Manvantara. I have already explained the timelines of Chākśuṣa Manvantara (12000-11200 BCE). Abhijit was above Uttara Āṣāḍhā around 12000 BCE. Taittirīya Brāhmaṇa also mentions that Abhijit was named so because Devas conquered the territories of Asuras and achieved a great victory over Asuras when Abhijit Nakśatra was still a pole star. Abhijit moved away from North Pole after 11000 BCE.

9. Taittirīya Brāhmaṇa indicates that during the conflict between the Devas and the Asuras, the Devas offered oblation to Sarpas, or Āśleṣā Nakśatra, and successfully subdued the perpetual hatred of their cousin brothers (*Dviṣantam Bhrātrivyamupanayati*).[30] Taittirīya Brāhmaṇa refers to Asuras as Sarpas and Dandaśūkas. Vritrāsura was well known as Ahi in the Rigvedic era. Sarpa (Ahi) is the deity of Āśleṣā Nakśatra. Seemingly, the Devas followed a calendar that commenced from the summer solstice at Dhaniṣṭhā Nakśatra whereas the Asuras followed a calendar that commenced from the winter solstice at Aśleṣā Nakśatra during the early Vedic period around 14500-14000 BCE. This may be the reason why Sarpa – or Ahi or Vritrāsura – became the deity of Aśleṣā Nakśatra. Gradually, the reckoning of the calendar of Devas had shifted to the Śarad Ritu, or autumnal equinox, and the reckoning of the calendar of Asuras had shifted to the Vasant Ritu, i.e. vernal equinox.

10. Taittirīya Brāhmaṇa also discussed Nakśatras, from Krittikā to Bharaṇī. Interestingly, it referred to the following numerous astronomical observations.

यस्य भान्ति रश्मयो यस्य केतवः। यस्येमा विश्वा भुवनानि सर्वा। स कृत्तिकाभिरभि संवसानः। अग्निर्नो देवः सुविते दधातु॥ (3.1.1.1)	It indicates the occurrence of Winter solstice at Krittikā Nakśatra. Winter solstice shifted from Rohiṇī to Krittikā around 9250-9200 BCE.

सा नो यज्ञस्य सुविते दधातु। यथा जीवेम शरदः सवीराः। रोहिणी देव्युदगात्पुरस्तात्। विश्वा रूपाणि प्रतिमोदमाना॥ (3.1.1.2)	"*Jīvema Śaradaḥ*" indicates the beginning of New Year from autumnal equinox. It also refers to the occurrence of winter solstice at Rohiṇī Nakśatra around 10200-9200 BCE.
सोमो राजा मृगशीर्षेण आगन्न्। शिवं नक्षत्रं प्रियमस्य धाम॥ (3.1.1.2) यत्ते नक्षत्रं मृगशीर्षमस्ति। प्रियँ राजन्प्रियतमं प्रियाणाम्। तस्मै ते सोम हविषा विधेम॥ (3.1.1.3)	In the beginning of Vaivasvata Manvantara (11200 BCE), rishis divided the zodiac into 28 Nakśatras starting from Mrigaśirā because winter solstice used to occur at Mrigaśirā. Prajāpati became the devata of Mrigaśirā. King Soma married 27 daughters (Rohiṇī to Ardrā) of Prajāpati.
प्रजापते रोहिणी वेतु पत्नी। विश्वरूपा बृहती चित्रभानुः॥ (3.1.1.1) प्रजापतिः प्रजा असृजत। ता अस्मात्सृष्टाः पराचीरायन्न्। तासाँ रोहिणीमभ्यध्यायत्। सोऽकामयत। उप मावर्तेत। समेनया गच्छेयेति। स एतं प्रजापतये रोहिण्यै चरुं निरवपत् ततो वै सा तमुपावर्तत॥ (3.1.4.2)	Gradually, Prajāpati became synonymous with the Sun and the beginning of Saṁvatsara. The winter solstice shifted from Mrigaśirā to Rohiṇī around 10200 BCE. This event was metaphorically observed as Prajāpati wanting to marry his own daughter "Uṣas". During the period 11200-10200 BCE, the heliacal rising of Rohiṇī was witnessed. Therefore, Rohiṇī was also known as Uṣas. This is the reason why Taittirīya Brāhmaṇa refers to Rohiṇī as wife of Prajāpati.

ऋध्यास्म हव्यैर्नमसोपसद्य। मित्रं देवं मित्रधेयं नो अस्तु। अनूराधान्हविषा वर्धयन्तः। शतं जीवेम शरदः सवीराः। चित्रं नक्षत्रमुदगात्पुरस्तात्। अनूराधास इति यद्वदन्ति। तन्मित्र एति पथिभिर्देवयानैः। हिरण्ययैर्विततैरन्तरिक्षे। इन्द्रो ज्येष्ठामनु नक्षत्रमेति। यस्मिन्वृत्रं वृत्रतूर्ये ततार॥ (3.1.2.1)

"*Chitram Nakśatramudagāt Purastāt*" clearly indicates the observation of heliacal rising of Chitrā Nakśatra in the past. Heliacal rising of Chitrā was observed around 13900-13000 BCE when vernal equinox was at Svāti Nakśatra. Vernal equinox was at Chitrā around 13000-12100 BCE.

तन्नो नक्षत्रँ शतभिषग्जुषाणम्। दीर्घमायुः प्रतिरद्भेषजानि। अज एकपादुदगात्पुरस्तात्। विश्वा भूतानि प्रतिमोदमानः॥ (3.1.2.8)

"*Aja Ekapādudagāt Purastāt*" indicates the observation of heliacal rising of Pūrva Bhādrapada Nakśatra in the past. The Autumnal equinox was at Uttara Bhādrapada around 11300-10350 BCE and at Pūrva Bhādrapada around 10350-9400 BCE.

11. Taittirīya Kāthakam mentions that Śarad Ritu is the Uttara Pakśa and Grīṣma Ritu is the Dakśiṇa Pakśa. It also refers to King Vaideha Janaka (10950 BCE) and Rishi Gautama.[31]

The Star "Kaśyapa" of Śiśumāra or Śiśukumāra (Draco) Constellation

Taittirīya Āraṇyaka mentions that the star "Kaśyapa" (the eighth rishi) of Śiśumāra constellation (Draco) does not depart from Mahāmeru.

कश्यपोऽष्टमः। स महामेरुं न जहाति। तस्यैषा भवति। यत्ते शिल्पं कश्यप रोचनावत्। इन्द्रियावत्पुष्कलं चित्रभानु। यस्मिन्त्सूर्या अर्पितास्सप्त साकम्॥

Evidently, the celestial pole is referred to as Mahāmeru. Thus, the star 'Kaśyapa' of the Śiśumāra constellation was the pole star during the time of Tittiris, the disciples of Vaiśampāyana. Taittirīya Āraṇyaka gives the detailed description of the Śiśumāra constellation and the star Kaśyapa.[32]

भूः प्रपद्ये भुवः प्रपद्ये स्वः प्रपद्ये भूर्भुवः स्वः प्रपद्ये ब्रह्म प्रपद्ये ब्रह्मकोशं प्रपद्येऽमृतं प्रपद्येऽमृतकोशं प्रपद्ये चतुर्जालं ब्रह्मकोशं यं मृत्युर्नावपश्यति तं प्रपद्ये देवान्प्रपद्ये देवपुरं

प्रपद्ये परीवृतो वरीवृतो ब्रह्मणा वर्मणाऽहं तेजसा **कश्यपस्य, यस्मै नमस्तच्छिरो** धर्मो मूर्धानं ब्रह्मोत्तरा हनुर्युज्ञोऽ धरा विष्णुर्हृदयँ संवत्सरः प्रजननमश्विनौ पूर्वपादावत्रिर्मध्यं मित्रावरुणावपरपादावग्निः पुच्छस्य प्रथमं काण्डं तत इन्द्रस्ततः प्रजापतिरभयं चतुर्थ, इति । स वा एष दिव्यः शाक्वरः **शिशुमारस्तँह**, इति । य एवं वेदाप पुनर्मृत्युं जयति जयति स्वर्गं लोकं नाध्वनि प्रमीयते नाग्नौ प्रमीयते नाप्सु प्रमीयते नानपत्यः प्रमीयते लघ्वान्नो भवति,—इति । ध्रुवस्त्वमसि **ध्रुवस्य क्षितमसि** त्वं भूतानामधिपतिरसि त्वं भूतानाँ श्रेष्ठोऽसि त्वां भूतान्युपपर्यावर्तन्ते नमस्ते नमः सर्वं ते नो नमः **शिशुकुमाराय नमः** ॥

Sāyaṇa indicates that this mantra begins with "भूः प्रपद्ये कश्यपस्य " (अथवा सायंकालीन सन्ध्यावन्दनादूर्ध्वम् ध्रुवमण्डले परब्रह्मोपस्थानार्थम् मन्त्रमाह "भूः प्रपद्ये कश्यपस्य" इति). The phrase "तेजसा कश्यपस्य" in this passage indirectly indicates that Kaśyapa is the brightest star in the Śiśumāra constellation.

The star Kaśyapa of the Śiśumāra constellation was at celestial pole starting from 11000 BCE. It was still a pole star around 8800-8700 BCE. The head of Śiśumāra was at celestial pole during this period.

Śiśumāra or Draco Constellation

Taittirīya Āraṇyaka - 2.19.1

Taittirīya Āraṇyaka describes that the head of Śiśumāra is like Chaturmukha Brahma. The Northern Star of the head is Yajña and the

Southern Star of the head is Vishnu. Saṁvatsara is the genital organ. Rishi Atri is the middle portion of body. Two Aśvins are its front feet whereas Mitra-Varuṇas are its back feet. Agni, Indra, Prajāpati and Abhaya are located in the tail of Śiśumāra. Taittirīya Āraṇyaka clearly refers to the Śiśumāra constellation as Dhruva and also states that the Kaśyapa star of this constellation does not depart from the celestial pole. This description unambiguously indicates the position of the head of Śiśumāra was in the North Pole direction. Kaśyapa was the brightest star of Śiśumāra (Draco) constellation: Therefore, the star 'Kaśyapa' was undoubtedly Gamma Draconis.

Dr. Subhash Kak and Sh. David Frawley identified Alpha Draconis (Thuban) as Kaśyapa since they fixed the date of Taittirīya Āraṇyaka around 3000 BCE. However, the tail of the Śiśumāra constellation was in the North Pole direction around 3000 BCE and not the head. Taittirīya Āraṇyaka refers to Alpha Draconis as Abhaya. Thus, Kaśyapa must be identified with Gamma Draconis.

Pārāsharya Vyāsa and Vaiśampāyana in Taittirīya Āraṇyaka

Taittirīya Āraṇyaka quotes Pārāsharya Vyāsa and Vaiśampāyana.[33] All Indologists have identified them to be Vyāsa and Vaiśampāyana of the Mahābhārata era and hence concluded that Taittirīya Saṁhitā, Brāhmaṇa and Āraṇyaka must be dated after the Mahābhārata era. In reality, Vyāsa Pārāsharya of 11180-11050 BCE was the real "Veda Vyāsa". The Vyāsa of the Mahābhārata era was the author of the Mahābhārata and eighteen Purāṇas. Rāmāyaṇa refers to Taittirīyas. If the Tittiris were the disciples of Vaiśampāyana of the Mahābhārata era, how can Taittirīyas exist during the Rāmāyaṇa era? Therefore, Pārāsharya Vyāsa (Veda Vyāsa), Vaiśampāyana and Tittiris (Katha, Vārāyaṇa and Upamanyu) flourished before the Rāmāyaṇa era. Pāṇini refers to three distinct phases of Sanskrit language as "Cḥāndas", i.e., Vedic and Post-Vedic Sanskrit (14000-7000 BCE) and "Bhāṣā", i.e., Laukika Sanskrit (7000 BCE onwards). Cḥāndas or Vedic Sanskrit is the language of the four Vedas. Post-Vedic Sanskrit is the language of Saṁhitās, Brāhmaṇas, Āraṇyakas and Upaniṣads. Bhashā or Laukika Sanskrit is the language of texts written in Laukika Anuṣṭup meter like Smritis, Rāmāyaṇa, the Mahābhārata and suchlike.

Iśāvāsyopaniṣad (10850 BCE)
Upaniṣads were the earliest texts of Indian philosophy. Iśāvāsyopaniṣad is the oldest Upaniṣad that is also the fortieth chapter of Yajurveda. According to Yajurveda Anukramaṇī, Rishi Dadhyaṅg Ātharvaṅa was the author of Iśāvāsyopaniṣad. Dadhyaṅg II Ātharvaṇa was the son of Atharva III Āṅgirasa, also known as Atharva Bhiṣak in the Rigvedic tradition. Rishi Pippalāda was the son of Dadhyaṅg II Ātharvaṇa, who lived around 10850 BCE.

Taittirīya Upaniṣad (8800-8700 BCE)
Sāyaṇa mentions that Taittirīya Upaniṣad is divided into three chapters: Saṁhiti (Śikśā Valli), Vāruṇī (Ānanda Valli) and Yājñikī (Bhrigu Valli). This Upaniṣad refers to Rishis Atharva Āṅgirasa, Rathītara, Pauruśiṣṭhi, Maudgalya and Bhrigu Vāruṇi (son of Varuṇa).

The Branches of Taittirīyas
There are two branches of Taittirīyas: Aukheya and Khāndikeya. Further, Khāndikeya had five branches, namely, Kāleyā, Śātyāyani, Hiraṇyakeśi, Bhāradwāji and Āpastambi.

Kāthaka Saṁhitā of Krishna Yajurveda (8800-8700 BCE)
Kāthaka Saṁhitā belongs to the Charaka branch of Kathas. A passage in Kāthaka Saṁhitā refers to Kuru-Pāñchāla King Dhritarāṣṭra, the son of Vichitravīrya (Vaichitravīrya).[34] Vaka Dālbhi was present in the Satra Yajña performed at Naimiṣāraṇya. He said that he will go to the court of Dhritarāṣṭra and get a house from him. Undoubtedly, Dhritarāṣṭra of Kathaka Saṁhitā was the Kuru-Pāñchāla king of the Rigvedic era and not the Kuru king of the Mahābhārata era.

Śatapatha Brāhmaṇa relates that the King Dhritarāṣṭra was defeated by Bharata King Śatānīka Sātrājita.[35]

"Sātrajito hāyam ādatta yajñan kāśīnām bharataḥ sātvatāmiveti atha dvitIyayā śvetam sāmantāsu vaśam charantam Śatānīko Dhritarāṣṭrasya medhyam ādāya sāhva daśamāsyamāśvam Śatānīko govinatena yaje iti…"

"Śatānīka Sātrājita seized a sacrificial horse of the Kāshis, in the neighbourhood, even as Bharata (seized that) of the Sātvats. The mighty

Śatānīka, having seized, in the neighbourhood, Dhritarāṣṭra's white horse, roaming at will in its tenth month, Śatānīka performed the Govinata-sacrifice (Aśvamedha)."

Kāthaka and Śatapatha refer to the same ancient Kuru-Pāñchāla King Dhritarāṣṭra who reigned up to Kāshi. Satyabhāmā, the sister of Śatānīka Sātrajita, married Krishna I, the disciple of Rishi Ghora Āṅgirasa. Thus, we can fix the date of Śatānīka Sātrajita and Dhritarāṣṭra Vaichitravīrya around 11150-11050 BCE.

Atharvaveda refers to Dhritarāṣṭra Airāvata.[36] Atharvāchārya was the author of the tenth sūkta of the eighth Kānda of Atharvaveda. He mentions Manu Vaivasvata, Prithu Vainya (son of King Vena), King Soma, Brihaspati Āṅgirasa, Indra, King Chitraratha Sauryavarchasa (son of King Sūryavarchas), Vasuruchi Sauryavarchasa, Kubera Vaiśravaṇa, Rajatanābhi Kauberaka, Takśaka Vaiśāleya (son of Viśālā) and Dhritarāṣṭra Airāvata. Pañchaviṁśa Brāhmaṇa mentions that Dhritarāṣṭra Airāvata was the Brahma of the Sarpa Satra.[37] Most probably, Dhritarāṣṭra Airāvata was either the son of Irāvati, or was born and brought up on the banks of Irāvati River. He was a Brāhmaṇa and a contemporary of the Nāga King Takśaka.

King Takśaka was the contemporary of Vedic kings Parīkśita and Janamejaya. He was the son of Nāga, the son of Kaśyapa and Kadru. Thus, Takśaka was also a contemporary of Vaivasvata Manu. Therefore, Dhritarāṣṭra Airāvata can be dated around 11250-11200 BCE. Kāthaka Saṁhitā also informs us that Divodāsa Bhaimaseni was a contemporary of Uddālaka Āruṇi.

Kapiṣṭhala Saṁhitā (8800-8700 BCE)

Kapiṣṭhala means the place of Kapi Rishi. Evidently, Kapiṣṭhala was a geographical name. Durgāchārya, the commentator of Yāska's Nirukta, refers to himself as Kapiṣṭhala Vāsishtha. Most probably, Kapiṣṭhala, the disciple of Katha, belonged to the Vasiṣṭha gotra. Kapiṣṭhala Saṁhitā mentions the names of twelve solar months from Madhu to Tapasya but the first mantra of Kapiṣṭhala also refers to Iṣa and Urja solar months of Śarad season.[38] Kapiṣṭhala Saṁhitā also refers to the rising of Krittikās in the East like Śatapatha Brāhmaṇa.[39]

Interestingly, Kapiṣṭhala Saṁhitā indicates the beginning of Vasanta Ritu from the full moon of Phālguna month.[40] It also mentions that Abhijit Nakśatra was named so because Devas achieved victory over Asuras in Abhijit Nakśatra.[41] Evidently, it indicates the position of Abhijit Nakśatra at the celestial North Pole when Devas defeated Asuras. Kapiṣṭhala Saṁhitā also refers to Ardhamāsa (half month).[42]

Maitrāyaṇī Saṁhitā, Brāhmaṇa, Āraṇyaka (8800-8700 BCE) and Upaniṣad (8200 BCE)

Rishi Maitri was the founder of Maitrāyaṇī recension of the Katha branch of Krishna Yajurveda. Maitrāyaṇī Saṁhitā indicates the beginning of Saṁvatsara from the full moon in Phālgunī Nakśatra.[43] It also considers Krittikā as the first Nakśatra. Therefore, Maitrāyaṇī Saṁhitā, Maitrāyaṇī Brāhmaṇa and Maitrāyaṇī Āraṇyaka can be dated around 8800-8700 BCE. Maitrāyaṇī Upaniṣad indicates that earlier, the half year (starting from vernal equinox) commenced from the first half of Maghā Nakśatra and ended in the middle of Śraviṣṭhā Nakśatra but now the half year (starting from autumnal equinox) has commenced in the beginning of Sārpa or Aśleṣā Nakśatra and ended in the second half of Śraviṣṭhā Nakśatra.[44]

> द्वादशात्मकं वत्सरमेतस्याग्नेयमर्धमर्धं वारुणं मघाद्यं श्रविष्ठार्धमाग्नेयं क्रमेणोत्क्रमेण सार्पाद्यं श्रविष्ठार्धान्तं सौम्यं तत्रैकैकमात्मनो नवांशकं सचारकविधम् ॥

Evidently, Maitrāyaṇī Upaniṣad indicates a date around 8200 BCE when the vernal equinox was in the beginning of Āśleṣā Nakśatra and the autumnal equinox was in the second half of Śraviṣṭhā Nakśatra. Earlier, the autumnal equinox was in the first half of Śraviṣṭhā Nakśatra and the vernal equinox was in the first half of Maghā Nakśatra around 9100 BCE. This statement also confirms that segmentation of ecliptic into twenty-seven equal parts, which means that Abhijit had been dropped from the list of Nakśatras by the time of Maitrāyaṇī Upaniṣad.

Maitrāyaṇī Upaniṣad also indicates that the pole star (Dhruva) deviates from the celestial North Pole.[45] Deneb was the pole star around 16500-13500 BCE and Abhijit was the pole star around 13500 10200 BCE. Gamma Draconis was the pole star around 10200-7500 BCE.

अथ किमेतैर्वान्यानां शोषणं महार्णवानां शिखरिणां प्रपतनं ध्रुवस्य प्रचलनं स्थानं वा तरूणां निमज्जनं पृथिव्याः स्थानादपसरणं सुराणं... ॥

Maitrāyaṇī Upaniṣad relates the story of Ikśvāku King Brihadratha and Rishi Śākāyanya. It mentions the names of great kings like Marutta, Bharata, Sudyumna, Bhūridyumna, Indradyumna, Kuvalayāśva, Yauvanāśva, Vadhyāśva, Aśvapati, Śaśabindu, Hariśchandra, Ambarīṣa, Nanaktu, Śaryāti, Yayāti, Anaraṇya and Ukśasena. Most probably, Ikśvāku King Brihadratha lived after Bhagīratha around 10800 BCE.

The Traditions of Sāmaveda After Vaiśampāyana

Patañjali's Mahābhāṣya indicates that Sāmaveda had 1000 branches. Śaunaka's Charaṇa Vyūha Sūtra also mentions that only fourteen branches out of 1000 branches have been survived.

1. Āsurāyaṇīya
2. Vāsurāyaṇīya
3. Vārtāntareya
4. Prāñjalarigvainavidha
5. Prāchīnayogya
6. Rāṇāyanīya (8 Branches)
   - i. Śātyāyanīya
   - ii. Sātyamudgala
   - iii. Khalvala
   - iv. Mahākhalvala
   - v. Lāṅgala
   - vi. Kauthuma
   - vii. Gautama
   - viii. Jaiminīya

Today, only three recensions of Sāmaveda (Kauthuma, Rānāyanīya and Jaiminīya) are available. Kauthumi was popular in Gurjarat, Rāṇāyanī in Maharashtra and Jaiminīya in Karnataka.

According to Rāṇāyanīya, Kauthuma and Jaiminīya traditions, Rāṇāyani, Sātyamugri, Durvāsa, Bhāguri, Bhārunda, Gorgulavi, Bhagavān

Aupamanyava, Dārāla, Gārgyasāvarṇī, Vārṣagaṇya, Kuthumi, Śālihotra, and Jaimini, were the earliest Sāmagāchāryas.

राणायनी सात्यमुग्री दुर्वासा अथ भागुरिः ।
भारुण्डो गोर्गुजवीर्भगवानौपमन्यवः ॥
दारालो गार्ग्यसावर्णी वार्षगण्यश्च ते दश।
कुथुमिः शालिहोत्रश्च जैमिनिश्च त्रयोदश॥

The chronology of the Brāhmaṇa and Upaniṣad texts of Sāmaveda:

	Kauthuma and Rāṇāyanī Branches	**In CE**
1	Pañchaviṁśa or Tāṇḍya Mahābrāhmaṇa	10800-9300 BCE
2	Ṣadviṁśa Brāhmaṇa	9300 BCE
3	Sāmavidhāna Brāhmaṇa	7000 BCE
4	Ārṣeya Brāhmaṇa	7000 BCE
5	Devatādhyāya or Daivata Brāhmaṇa	7000
6	Chāndogya Brāhmaṇa and Upaniṣad	8500 BCE
7	Saṁhitopaniṣad Brāhmaṇa	7000
8	Vaṁṣa Brāhmaṇa	7000 BCE
	Jaiminīya Branch	
1	Jaiminīya Brāhmaṇa	9000 BCE
2	Jaiminīya or Tavalkāra Upaniṣad Brāhmaṇa	9000 BCE

Pañchaviṁśa or Tāṇḍya Mahābrāhmaṇa and Ṣadviṁśa Brāhmaṇa (9300 BCE)

According to Sāmavidhāna Brāhmana, Rishi Tanḍi (10900 BCE) of later Rigvedic era was the disciple of Bādarāyaṇa (10950 BCE). He was the founder of Tāṇḍya branch. Vichakśaṇa Tāṇḍya (10200 BCE), was the thirtieth Āchārya of the Kauthuma-Rāṇāyanīya tradition. Seemingly, the disciples of Tanḍi known as Tāṇḍyas had compiled Tāṇḍya Brāhmaṇa. It also came to be known as Pañchaviṁśa Brāhmaṇa or Mahābrāhmaṇa because it contains twenty-five chapters. Ṣadviṁśa Brāhmaṇa (9300 BCE) is the twenty-sixth Prapāṭhaka of Pañchaviṁśa Brāhmaṇa. Jaiminīya Brāhmaṇa and Śatapatha Brāhmaṇa mention the Tāṇḍya branch of Sāmaveda.[46] Therefore, Tāṇḍya Brāhmaṇa must be dated before 9000 BCE and, most probably, it was written before Aitareya Brāhmaṇa (9200 BCE). Maśaka Gārgya was the author of Ārṣeyakalpa or Maśakakalpasūtra who

was one of the earliest Āchārya of Tāṇḍya branch. Seemingly, Tāṇḍya Brāhmaṇa followed the tradition of Ārṣeyakalpa of Maśaka. Pañchaviṁśa Brāhmaṇa refers to Kauśītakas of Śāṅkhāyana tradition.

There is a passage in Pañchaviṁśa Brāhmaṇa that indicates that Svarga is about 1000 earth diameters from the Earth. Dr. Subhash Kak quotes this passage in his article titled "Early Theories on the Distance to the Sun" and concludes, "The Sun was also taken to be halfway to the heavens, so this suggests a distance of the Sun about 500 earth diameters from earth." Ptolemy, using a method developed by Hipparchus, came to the conclusion that the Sun is about 600 Earth diameters distant from the Earth.[47]

Pañchaviṁśa metaphorically says that Prajāpati went on top of his own daughter, which indirectly indicates the shifting of winter solstice from Mrigaśirā to Rohiṇī around 10200 BCE.[48] Ṣadviṁśa Brāhmaṇa mentions the names of the four Yugas as Puṣya, Dvāpara, Khārvā and Krita.[49] Undoubtedly, it indicates a twenty-year cycle of four five-year Yuga cycles. Aitareya also refers to twenty-year cycle of Kali, Dvāpara, Tretā and Krita. Pañchaviṁśa also metaphorically describes that Mitra and Varuṇa are day and night resepctively.[50] Almost all Brāhmaṇa texts indicate the interval from the vernal equinox to the autumnal equinox or the summer solstice to the winter solstice to be exactly 180 days. This clearly indicates the period of Brāhmaṇa texts to be around 9500-8000 BCE.

Ṣadviṁśa Brāhmaṇa refers to tithi as Kalā. Chandra is the husband of Anumati, Rākā, Sinīvālī and Kuhū. Anumati is the Chaturdaśī Pūrṇimā and Rākā is the Ṣoḍaśī Pūrṇimā. Sinīvālī is the Chaturdaśī Amāvāsyā and Kuhū is the Ṣoḍaśī Amāvāsyā. Puṣya or Tiṣya was also another name of Kaliyuga. Ṣadviṁśa Brāhmaṇa indicates that Anumati is celebrated in Puṣya or Kaliyuga whereas Rākā is celebrated in Khārvā or Tretā Yuga. Sinīvālī is celebrated in Dvāpara Yuga whereas Kuhū is celebrated in Krita Yuga.[51] Sinīvālī is also mentioned in Rigveda.[52]

Sarasvati River Lost at Vinaśana

Pañchaviṁśa Brāhmaṇa mentions that Sarasvati River lost at a place called Vinaśana.[53] Sāyaṇa says that since Sarasvati had lost or gone

underground at Vinaśana, the rites were performed on the south bank of the river. Evidently, Sarasvati was flowing westwards during the time of Pañchaviṁśa Brāhmaṇa. Thus, Sarasvati had only north and south banks.

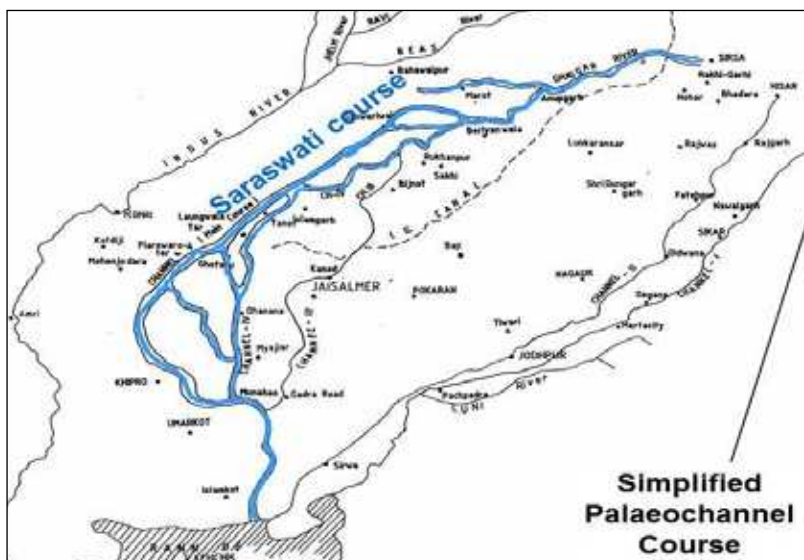
The Date of the Disappearance of Rigvedic Sarasvati River and Post-Vedic Sarasvati River

Numerous scientific studies have been undertaken for mapping and dating of the palaeochannels of Sarasvati River. Recent studies of the Great Ran of Kachch and Nd & Sr isotopic measurements suggest that a distinct source of water (Sarasvati River) may have been present before 10000 years. Later in Holocene, under a drying climate, sediments from the Thar Desert probably chocked the signature of an independent Sarasvati-like river. The new research undertaken by IIT Kanpur (IITK) and Imperial College, London, has also concluded that Sarasvati River might have been dried up around 8000-12000 years ago. Based on these scientific findings, IITK's Prof Rajiv Sinha and his team claimed: "Our paper clearly demolishes the age-old river-culture hypothesis that assumed that the disappearance of the river triggered the demise of the Harappan Civilization. This has clearly been demonstrated by the large difference in age data between the demise of the river (8000-12000 years ago) and the peak of mature civilization 3000-4000 years ago."

The study of IITK also suggests that between 15000 and 8000 years ago, the Sutlej River changed to its present day course to the northwest. The abandonment of the former course left a topographic low formed by the former channel in the landscape. The dating of the sediments in the palaeochannels was done by IITK using a technique known as Optically Stimulated Luminescence (OSL). It may be noted that the OSL method is not an accurate method and, therefore, the date arrived by the OSL method may be an underestimate (-10%).

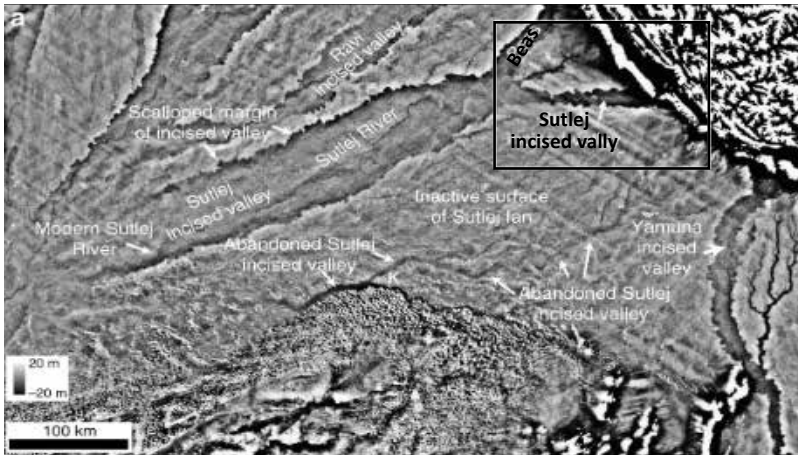
Vedic Sarasvati and Post-Vedic Sarasvati

First of all, it is pertinent to understand the difference between the course of Vedic Sarasvati River and that of Post-Vedic Sarasvati River. Vedic Sarasvati River originated at a place called Plakśa Prasravaṇa (near Badrinath) and flowed up to Prithūdaka (Pehova), close to Kurukshetra. Vedic Sarasvati took a south-western course from the Kurukshetra region

and flowed from Hisar, Sambhar Lake, Pushkar and Jodhpur to Great Rann of Kachch and Gulf of Kachch. Post Vedic Sarasvati River changed the course at Kurukshetra region and started flowing westwards. The map of Sarasvati Palaeochannel course given below clearly indicates the Channel II to be the course of Vedic Sarasvati River and the palaeochannels shown as "Sarasvati course" belonged to Post-Vedic Sarasvati River.

The palaeochannels I and II were the two original channels of Sarasvati River during the Rigvedic era (16000-10000 BCE). The Vedic story of Devāpi and Śāntanu (10600 BCE) and the drought of twelve years clearly indicate the weakening of south-west monsoon in Punjab, Haryana, Rajasthan, Gujarat areas after 11000 BCE. Most probably, the palaeochannels I and II gradually dried up around 10950 BCE. These two channels might have sourced the Sarasvati waters from the channels flowing though Kurukshetra. During the period 10950-10000 BCE, Sarasvati changed the course and started flowing westwards from Kurukshetra, Sirsa to Kalibanga and Anupgarh.

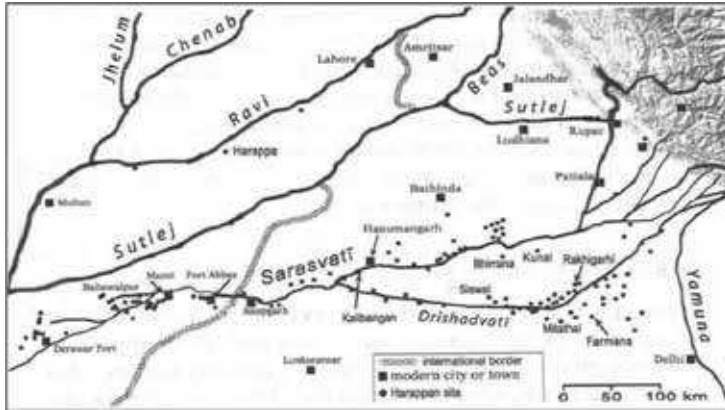
Pañchaviṁśa Brāhmaṇa explicitly mentions the change in the course of Sarasvati.[54] It says that Sarasvati started flowing from East to West and became नुञ्जिमती. Sāyaṇa interprets नुञ्जिमती as वक्रोपेता (tortuous). The

map of palaeochannel given above also confirms that Sarasvati became नुत्रि्जमती (tortuous) when the river changed the course towards West instead of flowing on south-western course. Pañchaviṁśa Brāhmaṇa also indicates that the East and the West banks of Sarasvati no longer existed in the region of Kurukshetra because Sarasvati started flowing from East to West. Therefore, Pañchaviṁśa says that the Dīkśā for Sarasvati Satra must be undertaken on the southern bank of Sarasvati at Vinaśana (the area where Sarasvati had disappeared in the Thar Desert or changed the course).

Sarasvati had many tributaries. Rigveda indicates that Sarasvati had seven main tributaries.[55] This may be the reason why Sarasvati was referred to as Saptasvasā (having seven sisters). Śutudrī, Yamuna and Driṣadvatī were the main tributaries of Sarasvati. Śutudrī (Sutlej) changed the course during the early Vedic period around 14500-13000 BCE. IITK has dated the palaeochannel of Sutlej River around 13000 BCE (15000 years ago) based on the OSL method. Considering the error margin of 10%, Sutlej might have changed the course around 14500-13000 BCE.

Most probably, Sutlej changed the course and started flowing westwards in the early Vedic period. This may be the reason why Śutudri (Sutlej) had no importance in Sarasvati Satra Vedic ritual. Yamuna and Driṣadvatī continued to be the tributaries of Sarasvati River. In all probability, Yamuna had two channels in the Vedic period. One Yamuna

channel flowed westwards and merged with Sarasvati in Kārapachava region of Himachal Pradesh (close to Paonta Sahib); whereas another channel flowed eastwards and merged with Ganga River at Prayāga.

The Yamuna Palaeochannels of Y1 and Y2 as shown in the map above were the tributaries of Sarasvati. It is difficult to say when Y2 palaeochannel changed the course because some scientists have also dated this change of course around 50000 years ago. Interestingly, the Avabhṛtha ritual was performed in Yamuna River in the janapada of Kārapachava at the end of the Sārasvatīya Satra as mentioned in Pañchaviṁśa Brāhmaṇa and Lātyāyana Śrautasūtra.[56] Seemingly, Yamuna, a tributary of Sarasvati (Y1 palaeochannel) had changed the course in later Vedic period. Probably, this change of course occurred at the same time when Sarasvati lost in the sands of desert. It appears that the Avabhṛtha ritual might have been introduced to commemorate the past confluence of Sarasvati and Yamuna. Most probably, the confluence of Sarasvati and Yamuna was located in Kārapachava janapada in the Rigvedic era and this janapada was located in between Nahan and Paonta Sahib and before Jagadhari, Yamunanagar in Haryana.

IITK has dated the end of Sarasvati River around 12000 years ago (10000 BCE). Considering the error margin of 10%, Sarasvati might have been lost at Vinaśana around 11100-10900 BCE. Pañchaviṁśa Brāhmaṇa and Lātyāyana Śrautasūtra indicate that Driṣadvatī was still a tributary of Sarasvati River. Manusmriti mentions that Driṣadvatī flowed to the south of Kurukshetra.

Though Yamuna changed the course around 11200 BCE, Driṣadvatī continued to be the tributary of Post-Vedic Sarasvati River. Driṣadvatī and Post-Vedic Sarasvati Rivers survived for many thousands of years after the Rigvedic era and finally dried up after the Mahābhārata War (3162 BCE), around 3000-2600 BCE.

Most probably, the palaeochannels I and II gradually dried up around 11200-10950 BCE. According to Vedic legends, Kalmāṣapāda Saudāsa (11225 BCE) killed the sons of Vasiṣṭha. Aggrieved, Vasiṣṭha wanted to commit suicide in Sarasvati River but the water in the River was not enough to drown him. There is also a legend that Sarasvati turned into many lakes. Viśvāmitra turned the waters of Sarasvati red. Probably, the copper ore of Khetri area (Jhunjhunu district of Rajasthan) turned the waters of dying Sarasvati River into a reddish colour. The legend of King Videha (10950 BCE) and Gautama Rāhūgaṇa indicates that King Videha migrated to the banks of Sadānīrā (Gandaki) River. Seemingly, Sarasvati dried up during the lifetime of King Videha. King Nami, son of Sāpya, was the first Videha king who performed Sarasvati Satra from Plakśa

Prasravaṇa to Vinaśana. Rajarshi Vaikuntha Indra (10650 BCE) mentions King Nami Sāpya in his Sūkta of Rigveda.[57] King Vaikuntha Indra was a descendant of the lineage of Indras (Śakra, Arjuna and Kutsa). Saptagu Āṅgirasa was a junior contemporary of Vaikuntha Indra. Pañchaviṁśa also quotes the anecdote of Videha King Nami, the son of King Sāpya, who performed Sarasvatīya Satra.[58]

I have already discussed the dates of Vasiṣṭha, Kalmāṣapāda, Viśvāmitra (11200 BCE), King Videha, and Rishi Gautama Rāhūgaṇa (10950 BCE). Evidently, Sarasvati River was lost in the desert during the lifetime of King Videha (10950 BCE) and his priest Rishi Gautama Rāhūgaṇa. Lātyāyana Śrautasūtra also refers to similar procedure of Sārasvata Satra as given in Pañchaviṁśa Brāhmaṇa. Sarasvati lost at Parīṇa Sthalī (Vinaśana = Uchana), close to Kurukshetra and used to flow westwards from Vinaśana. Lātyāyana states that the ritual must be performed on the southern banks of Sarasvati River – it also indicates that Driṣadvatī was reduced to be a seasonal river before the lifetime of Āchārya Dhānañjayya (7500 BCE).[59]

According to Bhāgavata Purāṇa, Vinaśana, the place of disappearance of Sarasvati was located close to Kurukshetra. Pañchaviṁśa mentions that Sarasvati originates from Plakśa Prasravaṇa and the distance between Plakśa Prasravaṇa and Vinaśana was 44 Aśvīnas.[60] Sarasvati originated from the hills of Badrinath. The Mahābhārata also indicates that Plakśa Prasravaṇa was located in the Shivalik Hills.

Ahnya, Aśvīna and Yojana were the oldest measures of distance during the Vedic and post-Vedic era. Ahnya was longer than Aśvīna, whereas Yojana was shorter. Pañchaviṁśa Brāhmaṇa (9300 BCE) refers to the distance of forty-four Aśvīnas. Evidently, Aśvīna means the distance a horse could travel without a break in a day. The same has been indicated by Pāṇini in his Sūtra.[61] Seemingly, Aśvīna was equal to ten to fifteen miles. During the later Rigvedic era (11200-10200 BCE), the south-west monsoon weakened after 11000 BCE. Yamuna also changed the course at the same time. Thus, the south-western channel of Vedic Sarasvati River dried up around 10950 BCE. Sarasvati River also changed the course and started flowing westwards from Kurukshetra, Sirsa to Kalibanga and

Anupgarh. Driṣadvatī River also joined the course of Post-Vedic Sarasvati River.

Vedic sources clearly tell us that Sarasvati originated from Plakśa Prasravaṇa and lost in desert at Vinaśana. Vinaśana was not a city but the area at which Sarasvati disappeared. The original Vinaśana was probably Sambhar Lake. This Lake was formed from the waters of Sarasvati River. Asura king Vriṣaparva's kingdom was located close to Sambhar Lake. His daughter Devayāni married King Yayāti (11200 BCE). The point of Vinaśana might have gradually shifted northwards. Vinaśana was at Uchana, Haryana, close to Kurukshetra, after 10000 BCE. This is the reason why Bhāgavata Purāṇa indicates the location of Vinaśana close to Kurukshetra.

Interestingly, the shifting of Vinaśana point might have also affected the length of the measurement unit of Aśvīna. Sarasvati's disappearance marked the end of the Rigvedic era. The Sarasvatīya Satra ritual was introduced after the disappearance of original course of Sarasvati. Videha King Nami, the son of King Sāpya, was the first who performed Sarasvatīya Satra. In all probability, King Nami Sāpya travelled forty-four Aśvīnas from Plakśa Prasravaṇa to Vinaśana. Considering Sambhar Lake as Vinaśana, there was a distance of 1000 or 1050 km from Badrinath to Sambhar Lake. Thus, one Aśvīna was equal to twenty-three or twenty-four kilometers (fifteen miles).

Thereafter, Vinaśana might have shifted close to Sadulpur, Rajasthan. Therefore, the distance of forty-four Aśvīnas reduced from 1050 kms to 730 or 770 km. Thus, one Aśvīna was equal to 16.5 or 17.5 km. Since the travel of forty-four Aśvīnas was linked the ritual Sarasvatīya Satra, the number of Aśvīnas remained forty-four but the distance was gradually reduced. Finally, the point of Vinaśana shifted to Uchana, Haryana, during the time of Pañchaviṁśa Brāhmaṇa (9300 BCE). The distance between Badrinath to Uchana is around 598 km. Thus, Aśvīna became equal to 13.5 km.

Since the length of Aśvīna probably varied from time to time, a standard measuring unit of Krośa (= 13.5 km) came into practice during the period 7000-5500 BCE, and the use of Aśvīna measure was

abandoned. Vālmiki Rāmāyaṇa refers to the Krośa of 13.5 km and a small unit of Yojana (165 or 175 meters). Later, a standardization of measuring units was undertaken during the pre-Mahābhārata era and a Yojana of 13.5 km came into practice.

Sarasvati River was flowing westwards during the Mahābhārata era (3162 BCE). Balarāma went for a pilgrimage and also travelled in a boat on Sarasvati River. There are references of Vinaśana in Vana Parva of Mahābhārata.

ततो विनशनं गच्छेन् नियतो नियताशनः,
गच्छत्यन्तर्हिता यत्र मरुपृष्ठे सरस्वती। (80.118)
तत् विनशनं गच्छेत् सर्वपापप्रमोचनम्,
वाजपेयम् अवाप्नोति सोमलकं च गच्छति॥ (82.96)
एषा सरस्वती पुण्या दिव्या चोघवती नदी,
एतद् विनशनं नाम सरस्वत्या विशांपते॥ (130.3)

Balarāma also visited the sacred place of Vinaśana where Vedic Sarasvati River was completely lost in sands. Vinaśana region was inhabited by Śūdras and Ābhīras during the Mahābhārata era. Evidently, Vinaśana and the westward flowing Post-Vedic Sarasvati River both existed during the Mahābhārata era.

As discussed above, we can fix the following important dates related to Sarasvati River.

- Shutudri or Sutlej, an ancient tributary of Vedic Sarasvati River, changed the course around 14500-13000 BCE and became the tributary of Sindhu River.
- Yamuna (Y1 palaeochannel), a tributary of Vedic Sarasvati River also changed the course in a massive earthquake that occurred around 11200 BCE.
- Vedic Sarasvati River lost in Thar Desert or disappeared in the sands around 10950 BCE.
- Vedic Sarasvati River changed the course and started flowing westwards and became tortuous around 10950-10000 BCE.
- The first Vinaśana was probably Sambhar Lake around 10950 BCE but Uchana or Parīṇa Sthalī in Kurukshetra was the Vinaśana point after 10000 BCE.

- Post-Vedic Sarasvati and Driṣadvatī Rivers survived up to the Mahābhārata era (3162 BCE) and dried up around 3000-2600 BCE.

Jaiminīya Brāhmaṇa, Jaminiya Upaniṣad Brāhmaṇa and Kenopaniṣad (9000 BCE)

The descendants or disciples of Jaimini I (11100 BCE) had compiled Jaiminīya Brāhmaṇa and Jaiminīya Upaniṣad Brāhmaṇa around 9000 BCE. Kenopaniṣad is the last chapter of Tavalkāra Upaniṣad Brāhmaṇa, or Jaiminīya Upaniṣad Brāhmaṇa. Jaimini belonged to the Tavalkāra branch of Sāmaveda. Jaiminīya Brāhmaṇa refers to King Janaka and Rishi Vājasaneya Yājñavalkya.[62] Āruṇi Vājasaneya, Barku Vārṣṇa, Priya Jānaśruteya, Budila Āśvatara, Aśvi Vaiyāghrapadya were the five Mahābrahmas of King Janaka. Rishi Agniveśya was also a contemporary of King Janaka. Jaiminīya Brāhmaṇa also refers to Kings Taranta and Purumīḍha who were contemporaries of Rishi Śyāvāśva Ātreya.[63]

Jaimini I was also the disciple of Veda Vyāsa and lived around 11100 BCE. According to Bhāgavata Purāṇa, Jaimini I taught Sāmaveda to his son Sumantu (11050 BCE). Sumantu's son was Sumanvān (11000 BCE). Sukarman (10950 BCE), the greatest scholar of Sāmaveda, was the son of Sumanvān. He founded 1000 branches of Sāmaveda and had two great disciples, Pauṣyāñji (10900 BCE) and Hiraṇyanābha Kausalya (10900 BCE). Pauṣyānji had four disciples: Laugākśi, Kuthumi, Kusīdi and Lāngali. Krita, the son of Puru king Sannatimān was a disciple of Hiraṇyanābha. Krita (10850 BCE) established twenty-four ways of singing of the Sāmaveda verses. Krita had five disciples: Laugākśi, Māngalu, Kulya, Kusīda and Kukśi.[64] According to Jaiminīya tradition, Prātitheyī, Badava, Māndavya, Bābhravya, Śākalya, Gautama, Bāhava, Jānantu, Parāśara, Vasiṣṭha, Viśvāmitra, Jaimini and Sumantu were the early āchāryas of Sāmaveda.

Cḥāndogya Brāhmaṇa and Upaniṣad (8600 BCE)

Cḥāndogya Brāhmaṇa consists of ten chapters. Mantra Brāhmaṇa of Sāmaveda (first and second chapters) and Cḥāndogya Upaniṣad (third to tenth chapters) are collectively called as Cḥāndogya Brāhmaṇa. Aitareya Brāhmaṇa refers to Cḥandogas.[65] It seems Cḥandoga may just be another name of the Sāmaveda tradition. Cḥāndogya Upaniṣad records that

Mahīdāsa Aitareya lived for 116 years.[66] Therefore, Chḥāndogya Upaniṣad must be dated after Mahīdāsa Aitareya (9300-9184 BCE). Chḥāndogya Upaniṣad mentions the following ancient rishis, āchāryas and kings.

		In CE	**Ref.**
1.	Vaka Dālbhya (A contemporary of Dhritarāṣṭra Vaichitravīrya and Śatānīka Sātrajita)	11150 BCE	1.2.13
2.	Kauṣītakī was the disciple of Uddālaka Āruṇi	10900 BCE	1.5.2
3.	Uddālaka Āruṇi (He was the contemporary of Yājñavalkya and King Janaka of Videha Kingdom)	10920 BCE	3.11.4-5
4.	Śvetaketu Āruṇeya (Son of Uddālaka Āruṇi)	10890 BCE	5.3.1
5.	Haridrumata Gautama (Teacher of Satyakāma Jābāla)	11140 BCE	4.4.1-4
6.	Satyakāma Jābāla (A contemporary of Uddālaka I)	11100 BCE	
7.	Upakosala Kamalāyana (A disciple of Satyakāma Jābāla)	11080 BCE	4.10.1
8.	Gośruti Vaiyāghrapadya (A disciple of Satyakāma Jābāla)	11080 BCE	5.2.3
9.	Gautama and King Ardhameya	11100 BCE	5.3.6
10.	Pravāhaṇa Jaivali (A contemporary of Śvetaketu)	10890 BCE	1.8.1-2
11.	Śīlaka Śālāvatya	10890 BCE	
12.	Chaikitāyana Dālbhya	10890 BCE	
13.	Śaunaka Kāpeya (A contemporary of Kākśaseni)	11200 BCE	4.3.5
14.	King Kākśaseni (Son of King Kakśasena and grandson of Janamejaya)	11200 BCE	
15.	Prāchīnaśāla Aupamanyava	10910 BCE	5.11.1-2
16.	Satyayajña Pauluṣi	10910 BCE	

17.	Indradyumna Bhālāveya	10910 BCE	
18.	Śarkrākśya Budila	10910 BCE	
19.	Śauva Udgītha	11100 BCE	1.12.1
20.	Glāvo Maitrya	11100 BCE	
21.	Chākrāyaṇa	10900 BCE	1.10.1
22.	Atharva Āṅgirasas (The descendants of Atharva Āṅgirasa traditionally studied Itihāsa and Purāṇas)	10900 BCE	3.4.1-2
23.	Śāṇḍilya	10900 BCE	3.14.4
24.	Mahīdāsa Aitareya (He lived for 116 years)	9300-9184 BCE	3.16.7
25.	Ghora Āṅgirasa and his disciple Devakīputra Krishna (Krishna, the disciple of Ghora Āṅgirasa lived in the Rigvedic era whereas Krishna, the disciple of Sāndīpani lived in the Mahābhārata era.)	11150 BCE	3.17.6
26.	Jānaśruti Pautrāyana	10910 BCE	4.1.2

Cḥāndogya refers to Sanatkumāra[67] and indicates that Sanatkumāra was also called as Skanda.[68] Cḥāndogya also refers to Itihasa-Purāṇa as the fifth Veda.[69] Romaharṣaṇa Sūta (11100 BCE), the fifth disciple of Veda Vyāsa (11180-11050 BCE), was the earliest known author of the Saṁhitas of Itihasa and Purāṇa. Thus, Cḥāndogya Upaniṣad must be dated after Romaharṣaṇa Sūta (11100 BCE). According to Cḥāndogya, Rigveda, Yajurveda, Sāmaveda, Atharvaveda, Itihāsa-Purāṇa, Pitrya (knowledge of ancestors), Rāśi (Mathematics), Daiva, Nidhi, Vākovākya (logic), Ekāyana (ethics), Devavidyā, Brahmavidyā (Philosophy), Bhūtavidyā (Āyurveda), Kśatravidyā (Dhanurveda), Nakśatravidyā (astronomy) and Sarpadevajanavidyā were the important subjects of study.

Sāmavidhāna Brāhmaṇa (7500-7000 BCE)

Sāyaṇa mentions that Tāṇḍya, or Pañchaviṁśa, is the first Brāhmaṇa; Ṣaḍviṁśa the second; and Sāmavidhāna is the third. Sāmavidhāna Brāhmaṇa gives the following guruparamparā:[70]

		In CE
1.	Prajāpati	11225 BCE
2.	Brihaspati	11210 BCE
3.	Nārada	11200 BCE
4.	Viśvaksena	11180 BCE
5.	Vyāsa Pārāśarya	11160 BCE
6.	Jaimini	11100 BCE
7.	Pauṣpinḍya	11050 BCE
8.	Pārāśaryāyaṇa	11000 BCE
9.	Bādarāyaṇa	10950 BCE
10.	Tānḍi and Śātyāyani	10900 BCE

Sāmavidhāna Brāhmaṇa states that Tānḍi and Śātyāyani had many students (*Bahubhyaḥ*). "*Bahubhyaḥ*" also indicates many generations after Tānḍi and Śātyāyani. There is also a reference of Vaikhānasa Rishis.[71] Sāmavidhāna refers to Vināyaka and Skanda as deities.[72] Sāmavidhāna mentions Dhanvantari as an epithet of Varuṇa (*Varuṇāya Dhanvantaraye*).[73] It states that one should not talk to Anāryas during three days of 'Kricchra' penance.[74] Sāyaṇa explains that Śūdras and Patitas (fallen people) are called Anāryas. Interestingly, Sāmavidhāna Brāhmaṇa is the earliest Sanskrit text that refers to "Kārṣāpaṇa", a gold coin.[75]

Apart from the above, the content of various Prāyaśchitta rituals also indicates that Sāmavidhāna Brāhmaṇa was written in a later period. Therefore, Sāmavidhāna Brāhmaṇa must be dated around 7500-7000 BCE.

Ārṣeya Brāhmaṇa and Daivata Brāhmaṇa (7500-7000 BCE)
Ārṣeya and Daivata Brāhmaṇas are written in Sūtra style. Ārṣeya is an index to the hymns of Sāmaveda. Most probably, Daivata Brāhmaṇa is the oldest available text on Vedic meters (Cḥandas).

Saṁhitopaniṣad Brāhmaṇa (7000 BCE) and Vaṁśa Brāhmaṇa (6850 BCE)
Saṁhitopaniṣad has only one Prapāthaka. Saṁhitā and Vaṁśa Brāhmaṇas are also written in Sūtra style. Vaṁśa Brāhmaṇa gives the following Guruparamparā of Sāmaveda, starting from Brahma to Sarvadatta Gārgya.

No.	Name	**In CE**
1.	Brahma	14000-13600 BCE
2.	Prajāpati	
3.	Mrityu	
4.	Vāyu	
5.	Indra	
6.	Agni	
7.	Kāśyapa	11250-10000 BCE
8.	Riṣyaśriṅga Kāśyapa	
9.	Vibhanḍka Kāśyapa	
10.	Mitrabhū Kāśyapa	
11.	Indrabhū Kāśyapa	
12.	Agnibhū Kāśyapa	
13.	Śavas	
14.	Devatara Śāvasāyana	
15.	Pratithi Devataratha	
16.	Nikothaka Bhāyajātya	
17.	Vruṣaśuṣṇa Vātāvata	
18.	Indrota Śaunaka	
19.	Driti Indrota Śaunaka	
20.	Arāla Dārteya Śaunaka	
21.	Śūṣa Vāhneya Bhāradwāja	
22.	Sumantra Bhābhrava Gautama	
23.	Vāsiṣṭha Āraihaṇya Rājanya	
24.	Vāsiṣṭha Chaikitāyana	
25.	Sthiraka Gārgya	
26.	Maśaka Gārgya	
27.	Śaunaka	
28.	Udaraśānḍilya Atidhanvan	
29.	Gardabhimukha Śānḍilyāyana	
30.	Vichkśaṇa Tānḍya	
31.	Śākadāsa Bāditāyana	

No.	Name	Period
32.	Saṁvargajit Lāmakāyana	
33.	Gātu Gautama	
34.	Rādha Gautama	
35.	Amāvāsya Śāṇḍilyāyana	
36.	Aṁśu Dhānañjaya	
37.	Sutemana Śāṇḍilyāyana	
38.	Sunītha Kāpatava	
39.	Mitravinda Kauhala	
40.	Ketu Vājya	
41.	Prātarahna Kauhala	
42.	Suśrava Vārṣagaṇya	
43.	Svāti Auṣtrākśi	
44.	Madragāra Śauṅgāyana	
45.	Kāmboja Aupamanyava	
46.	Śāmba Śarkarākśya	
47.	Ānandaja Chāndhanāyana	11250-10000 BCE
48.	Bhānumān Aupamanyava	
49.	Urjayan Aupamanyava	
50.	Suśārada Śālakāyana	
51.	Śravaṇadatta Kauhala	
52.	Kustuka Śarkarākśya	
53.	Bhavatrāta Śāyasthi	
54.	Brihaspatigupta Śāyasthi	
55.	Supratita Aulunḍya	
56.	Mitravarcha Sthairakāyana	
57.	Brahmavriddhi Cḥandogamāhaki	
58.	Giriśarma Khānṭaviddha	
59.	Nigada Pārṇavalki	
60.	Trāta Aiṣumata	
61.	Rudrabhuta Drāhyāyaṇa	
62.	Sarvadatta Gārgya	

Seemingly, the original Sāmaveda Guruparamparā had a gap after Sarvadatta Gārgya. Therefore, the author of Vaṁśa Brāhmaṇa did not give the names of āchāryas after Sarvadatta Gārga. At the end of Vaṁśa Brāhmaṇa, the author gives the Guruparamparā of his Guru Aryamabhūti Kālabhava.

		In CE
1.	Gautama	7600 BCE
2.	Rādha	7550 BCE
3.	Gobhila	7500 BCE
4.	Brihadvasu Gobhila	7450 BCE
5.	Gaulgulaviputra Gobhila	7400 BCE
6.	Vatsamitra Gobhila	7350 BCE
7.	Mūlamitra Gobhila	7300 BCE
8.	Varuṇamitra Gobhila	7250 BCE
9.	Aśvamitra Gobhila	7200 BCE
10.	Pūṣamitra Gobhila	7150 BCE
11.	Aryamarādha Gobhila	7100 BCE
12.	Saṅkara Gautama	7050 BCE
13.	Puṣyayasha Audavajri	7000 BCE
14.	Bhadraśarmā Kauśika	6950 BCE
15.	Aryamabhūti Kālabhava	6900 BCE
16.	The author of Vaṁśa Brāhmaṇa	6850 BCE

The Tradition of Atharvaveda After Veda Vyāsa

According to Charaṇa Vyūha, Paippala, Dānta, Pradānta, Auta, Jābāla, Śaunaka, Brahmapalāśa, Kunakhivedadarśi and Chāraṇavidyā were the nine branches of Atharvaveda. There were five Kalpas of Atharvaveda, namely Nakśatrakalpa, Vidhānakalpa (also known as Āṅgirasakalpa), Vidhividhānakalpa, Saṁhitākalpa and Śāntikalpa. There were also seventy-two pariśiṣṭas of Atharvaveda.

Sumantu I (11100 BCE) was the disciple of Veda Vyāsa whereas Sumantu II was the son of Jaimini I (11100 BCE). According to Vishnu and Bhāgavata Purāṇas, Sumantu I taught Atharvaveda to Kabandha who

made it twofold. Kabandha taught two portions of Atharvaveda to his two disciples, Vedadarśa and Pathya. Vedadarśa's pupils were Maudga or Modośa, Brahmabali or Brahmavani, Śaulkāyani and Pippalāyani. Pathya's disciples were Jājali, Kumudādi and Śaunaka. Śaunaka divided his Saṁhitā into two and gave one to Babhru and the other to Saidhavāyana. Babhru founded the school of Muñjakeśas whereas Saidhavāyana founded the school of Saindhavas. Sāvarṇa was the pupil of Saidhavāyana. Thereafter, the authors of Nakśatrakalpa, Śānti, Kaśyapa and Āṅgirasa and the rest, were the āchāryas of Atharvaveda.

Nakśatrakalpa of Atharvaveda (9200 BCE)

Nakśatrakalpa gives the list Nakśatras, starting from Krittikā. It assigns Devatā and Rishi to each Nakśatra. Seemingly, this pariśiṣṭa was added to Atharvaveda during the time of Sarvadatta Gārgya (10000 BCE). It appears that Rishi Gārgya was the original author of two Nakśatra Sūktas of Atharvaveda.[76] Seemingly, these two Nakśatra Sūktas had been edited by Sarvadatta Gārgya around 10000 BCE, when winter solstice was shifted from Mrigaśirā to Rohiṇī. These two Sūktas had been again edited around 9200-9000 BCE because winter solstice was shifted from Rohiṇī to Krittikā around 9200-9000 BCE.

	Nakśatra	**Devatā**	**Rishi**
1.	Krittikā	Agni	Agniveśya
2.	Rohiṇī	Prajāpati	Anurohi
3.	Mrigaśirā	Soma	Śvetāyi
4.	Ārdrā	Rudra	Bhārgava
5.	Punarvasu	Aditi	Vātsyāyana
6.	Puṣya	Brihaspati	Bhāradwāja
7.	Āśleṣā	Ahi	Jātūkarṇya
8.	Māgha	Pitaraḥ	Vyāghrapāda
9.	Pūrva Phālguni	Bhaga	Parāśara
10.	Uttara Phālguni	Aryamā	Upaśiva
11.	Hastā	Savitā	Māṇḍavya
12.	Chitrā	Tvaṣṭā	Gotama

13.	Svāti	Vāyu	Kaunḍinya
14.	Viśākhā	Indrāgnī	Kapi
15.	Anurādhā	Mitra	Maitreya
16.	Jyeṣṭha	Indra	Kauśika
17.	Mūlā	Nairriti	Kutsa
18.	Pūrva Āṣāḍhā	Āpaḥ	Hārīta
19.	Uttara Āṣāḍhā	Viśvedevāḥ	Kaśyapa
20.	Abhijit	Brahma	Śaunaka
21.	Śroṇā or Śravaṇa	Vishnu	Atri
22.	Śraviṣṭhā / Dhaniṣṭhā	Vāsava	Garga
23.	Śatabhiṣak	Indrāvaruṇa	Dākśāyana
24.	Pūrva Proṣṭhapadā	Aja Ekapād	Vatsa
25.	Uttara Proṣṭhapadā	Ahirbudhnya	Agastya
26.	Revatī	Pūṣan	Śāṅkhāyana
27.	Āśvayuj	Aśvins	Kātyāyana
28.	Bharaṇī	Yama	Mātribhyo (Rishi-patnyaḥ)

According to Nakśatrakalpa, Rigveda, Yajurveda, Sāmaveda, Brahmaveda (Atharvaveda), Śikśā, Kalpa, Vyākaraṇa, Nirukta, Cḥandas, Jyotiṣa, Itihāsa-Purāṇa and Vākovākya are the important subjects of study. Nakśatrakalpa refers to Śakadhūma (the smoke of cow dung), i.e. the Milky Way galaxy, as the king of Nakśatras. Atharvaveda also mentions the same.[77]

शकधूमं नक्षत्राणि यद्राजानमकुर्वत।
भद्राहमस्मै प्रायच्छन् इदं राष्ट्रमसादिति ॥

Praśnopaniṣad (10500-9500 BCE)

Praśnopaniṣad is the second oldest Upaniṣad and comes from the Brāhmaṇa portion of the Paippalāda branch of Atharvaveda. Sukeśā of Bhāradwāja gotra, Satyakāma Śaivya (belonged to Śivi lineage), Gārgya Sauryāyaṇi (belonged to the family of Rishi Sūrya), Āśvalāyana Kausalya (a native of Kosala janapada), Bhārgava Vaidarbhi (a native of Vidarbha janapada) and Kabandhi of Kātyāyana gotra were the six disciples of Rishi

Pippalāda. They asked six praśnas (questions) to Rishi Pippalāda. This Upaniṣad also refers to Prince Hiraṇyanābha of Kosala (10900 BCE).

Interestingly, Anandagiri's commentary on Praśnopaniṣad has an astronomical statement "*Jyeṣṭhādir Dakśiṇāyanam*" (1.9) as quoted by Balagangadhara Tilak.[78] It is difficult to explain how this statement is linked to the context of Praśnopaniṣad but it clearly indicates the occurrence of summer solstice in the beginning of Jyeṣṭha Nakśatra. Summer solstice occurred in Jyeṣṭha Nakśatra around 10500-9500 BCE. Possibly, Praśnopaniṣad might have been written by the pupils of Pippalāda branch around 10500-9500 BCE.

Gopatha Brāhmaṇa (8000-7500 BCE)

Gopatha is the only Brāhmaṇa of Atharvaveda. It unambiguously indicates the commencement of Saṁvatsara (New Year) from Viṣuvat, i.e., the autumnal equinox.[79] Interestingly, Gopatha Brāhmaṇa indicates that the equinox shifts back by one Nakśatra (13.20 degrees) in 1000 years. While referring to the questions related to precession ["Why Darśa (new moon) shifts back? Why Paurṇamāsī (full moon) shifts back? Why the Agrāyaṇa (equinox) shifts back? Why Chāturmāsya shifts back?], Gopatha Brāhmaṇa states that Devas used to perform rituals for 1000 years, which clearly indicates the precession of equinox by one Nakśatra in 1000 years.[80]

Gopatha Brāhmaṇa mentions that Viśvāmitra was the first to discover Sampātas. Evidently, Sampāta means precession of equinox.[81] According to the Mahābhārata, Viśvamitra revised the list of Nakśatras, starting from Śravaṇa. Viśvāmitra I flourished around 13500 BCE and observed the precession of summer solstice from Dhaniṣṭhā to Śravaṇa.

According to Gopatha Brāhmaṇa, Saṁvatsara or New Year commenced from the full moon at Uttara Phālguni Nakśatra and ended when moon was in Pūrva Phālgunī Nakśatra.[82] Thus, Uttara Phālgunī was the face of Saṁvatsara and Pūrva Phālgunī was the tail end of Saṁvatsara. The fifth year of five-year Yuga cycle had thirteen months, including one intercalary month of Pauṣa. Therefore, the first full moon of Saṁvatsara (the first year of five-year Yuga cycle) occurred in Uttara Phālgunī.

The four Vedas, Itihasa-Purāṇa, Vakovākya, Gāthā, Nārāśaṁsī, Upaniṣads, Brāhmaṇas, Kalpa, Nirukta, Anvākhyāna and Anuśāsana and suchlike were the important subjects of study during the time of Gopatha Brāhmaṇa.[83] Sarpaveda of Nāgas, Piśāchaveda of Piśāchas, Asuraveda of Asuras, Itihāsaveda and Purāṇaveda are also mentioned in Gopatha Brāhmaṇa.[84] Seemingly, Sanskrit grammar was well developed during the time of Gopatha Brāhmaṇa. It refers to Dhātu, Prātipadika, Ākhyāta, Liṅga, Vachana, Vibhakti, Pratyaya, Upasarga, Svara, Nipāta, Varṇa, Akśara and more.[85]

Gopatha Brāhmaṇa refers to many ancient rishis and āchāryas like Uddālaka Aruni,[86] Śvetaketu Āruṇeya,[87] Uddālaka's disciple Kauśāmbeya Kausaravindu,[88] Prāchīnayogya and his guru Gautama,[89] Priyamedha Bhāradwāja,[90] Maudgalya and his disciple Glāva Maitreya.[91] It also mentions Kābandhi, the son of Kabandha, the disciple of Sumantu and a junior contemporary of King Yauvanāśva.[92] Many northern janapadas like Kuru-Pāñchāla, Aṅga-Magadha, Kāshi-Kauśalya, Śālva-Matsya and Śavasa-Uśīnara are found mentioned in Gopatha Brāhmaṇa.[93]

Interestingly, Gopatha Brāhmaṇa refers to gold, silver, iron, lead and alloys.[94]

> अथापि वेदानां रसेन यज्ञस्य विरिष्टं सन्धीयते तद् यथा लवणेन सुवर्णं संदध्यात् **सुवर्णेन रजतं रजतेन लोहं लोहेन सीसं सीसेन त्रप्व् एवम्** एवास्य यज्ञस्य विरिष्टं संधीयते यज्ञस्य संधितिम् अनु यजमानः संधीयते ॥

Generally, verses were written in Vedic meters during the period of Brāhmaṇas and Upaniṣads. The writing of verses in Laukika Anuṣṭup Cḥandas was introduced in the later period of Brāhmaṇas and Upaniṣads. The Sūtra style and the Śloka style for writing treatises became popular after the end of Brāhmaṇa and Upaniṣad period. Gopatha Brāhmaṇa is the first Brāhmaṇa text which contains some slokas.[95]

The Lost Brāhmaṇa Texts

There were many more Brāhmaṇa texts that existed in ancient times but are not available today. These are Āśvalāyana Brāhmaṇa, Gālava Brāhmaṇa, Charaka Brāhmaṇa, Śātyāyana Brāhmaṇa, Paingyāyani Brāhmaṇa,

Śvetāśvatara Brāhmaṇa, Kāthava Brāhmaṇa, Jābālaka Brāhmaṇa, Kāpeya Brāhmaṇa, Khāndikeya Brāhmaṇa, Rauraki Brāhmaṇa, Āruṇeya Brāhmaṇa and Pārāśara Brāhmaṇa.

The Tradition of Itihāsa-Purāṇa Saṁhitās After Veda Vyāsa

Traditionally, it was a duty of the Sūtas and Māgadhas to preserve the Itihāsa and the genealogy of Devas, Rishis and kings. A Sūta was the son of a Kśatriya father and a Brāhmaṇa mother, whereas a Magadha was the son of a Kśatriya mother and a Vaiṣya father. According to Purāṇas, King Prithu (14000 BCE), the son of Vena was the progenitor of the Sūtas and the Māgadhas. King Prithu assigned Anūpa deśa (close to Bengal) to Sūta and Magadha deśa to Māgadhas. The Sūtas were Pauraṇikas (historians) whereas Māgadhas were Vaṁśa-Śaṁsakas (genealogists). There were also Vandins or Stāvakas (eulogists). Thus, the tradition of preserving history and genealogy was established during the early Rigvedic period.

Cḥāndogya Upaniṣad indicates that the descendants of Atharva Āṅgirasa (10900 BCE) also studied Itihāsa Purāṇa.[96] Veda Vyāsa (11180-11050 BCE) taught the Pauraṇika Saṁhitā to his disciple Lomaharṣaṇa or Romaharṣaṇa Sūta. Brahmāṇḍa Purāṇa relates that Lomaharṣaṇa wrote Paurāṇika Saṁhitā in six volumes known as "*Lomaharṣaṇikā*" and taught them to his pupils. Ātreya, Sumati, Kāśyapa, Akritavarṇa, Bhāradwāja, Agnivarchas, Vāsiṣṭha, Mitrayu, Sāvarṇi, Somadatti, Suśarmā and Śamśapāyana. Kaśyapa, Sāvarṇi and Śamśapāyana wrote their Saṁhitās.[97] Thus, Lomaharṣaṇikā Saṁhitā, Kāśyapikā Saṁhitā, Sāvarṇikā Saṁhitā and Śāmśapāyanikā Saṁhitā were the earliest Saṁhitās of Itihāsa. All three Saṁhitās except Lomaharṣaṇikā Saṁhitā consisted of four padas (chapters) and 4000 paragraphs. Unfortunately, none of these Saṁhitās are available today. Seemingly, these Saṁhitās were collectively called Itihāsa-Purāṇa.

Āpastamba quotes Purāṇas in his Dharma Sūtra [*Yo himsārtham abhikrāntam hanti manyureva manyum spriśati na tasmin doṣa iti Purāṇe*].[98] Āpastamba also refers to a passage from old Bhaviṣyat Purāṇa in prose. It appears that the tradition of writing Itihāsa-Purāṇa continued after Lomaharṣaṇa and his disciples. Seemingly, old Purāṇa Saṁhitās were generally written in prose. Āpastamba also quotes verses from

old Purāṇas. None of the Puranic quotations of Āpastamba is available verbatim in the Purāṇas available today because the Purāṇas have been periodically updated.

Lagadha's Vedāṅga Jyotiṣa (8400 BCE)

It is generally misinterpreted by many scholars that Vedāṅga Jyotiṣa fixes winter solstice at the beginning of Śraviṣṭhā Nakśatra and summer solstice at the middle of Āśleṣā Nakśatra. This misinterpretation leads to a date around 1400 BCE. In fact, there is enough evidence to establish that Vedāṅga Jyotiṣa calendar has been traditionally followed starting from the post-Vedic period to the Mahābhārata era (3162 BCE). Moreover, Sūrya, Parāśara and Vriddha Āryabhaṭa Siddhāntas were well established before 3101 BCE. The Mahābhārata clearly indicates the knowledge of Vedāṅga Jyotiṣa. Therefore, it would be chronologically a blunder to date Vedāṅga Jyotiṣa around 1400 BCE.

Vedas and Brāhmaṇas unambiguously indicate the beginning of Saṁvatsara in Śarad season. Therefore, the reference of Viṣuvat or Udagayana must be interpreted as autumnal equinox and not as winter solstice. Gopatha Brāhmaṇa mentions the beginning of Saṁvatsara from Viṣuvat (equinox).[99] It also states that the period from vernal equinox to autumnal equinox is the Dakśiṇa Pakśa and the period from autumnal equinox to vernal equinox is the Uttara Pakśa. Therefore, the statement "*ayanam hyudak*" of Vedāṅga Jyotiṣa[100] must be interpreted as the autumnal equinox. There are two versions of Vedāṅga Jyotiṣa, Rigveda Jyotiṣa (thirty-six verses) and Yajurveda Jyotiṣa (forty-four verses). The second verse of Rigveda Jyotiṣa indicates that Śuchi had compiled the jyotiṣa of Lagadha Muni. Evidently, Lagadha was not the real author of the available text of Rigveda Jyotiṣa. The available Vedāṅga Jyotiṣa might have been recompiled around 4000-3000 BCE because it refers to Tapas month of Śiśira season as the beginning of New Year.

पंचसंवत्सरमयं युगाध्यक्षं प्रजापतिम् ।
दिनर्त्वयनमासांगं प्रणम्य शिरसा शुचिः ॥
प्रणम्य शिरसा कालमभिवाद्य सरस्वतीम् ।
कालज्ञानं प्रवक्ष्यामि लगधस्य महात्मनः ॥

Though this verse is not available in the text of Yajurveda Jyotiṣa, the ślokas written in Laukika Anuṣṭup meter indicate that these two texts were written after the period of Brāhmaṇas and Upaniṣads. Most probably, Śuchi had compiled Rigveda and Yajurveda Jyotiṣa based on the ancient treatise of Lagadha in ślokas of Anuṣṭup meter around 4000-3000 BCE. The date of Lagadha Muni can be fixed around 8400-8300 BCE based on the internal evidence of Vedāṅga Jyotiṣa as details given below.

	Equinox/Solstice	Nakśatra	In CE
1.	Autumnal Equinox	At the beginning of Śraviṣṭhā (δ Capricorni or β Aquarii and not β Delphini)	8400-8300 BCE
2.	Winter Solstice	At Bharaṇī	8400-8300 BCE
3.	Vernal Equinox	At the middle of Āśleṣā	8400-8300 BCE
4.	Summer Solstice	At Viśākhā	8400-8300 BCE

Katha, Śvetāśvatara, Māṇḍūkya, Munḍaka and Mahanārāyaṇa Upaniṣads (7500-7000 BCE)

Katha, Śvetāśvatara, Māṇḍūkya, Munḍaka and Mahanārāyaṇa are written mostly in ślokas. Many ślokas are written in Laukik Anuṣṭup meter. The Sūtra style and the Śloka style came into practice in the later Brāhmaṇa and Upaniṣad period (7500-7000 BCE). Munḍaka refers to Śikśā, Kalpa, Vyākaraṇa, Nirukta, Cḥandas and Jyotiṣa as important subjects of study.

Nirukta of Yāska (6500 BCE)

Nirukta was an important subject of study starting from the Brāhmaṇa-Upaniṣad period (10000-8000 BCE). Nighanṭu was the earliest text of Nirukta. Brahmāṇḍa Purāṇa (1.35) tells us that Śākalya wrote Nirukta.

देवमित्रश्च शाकल्यो महात्मा द्विजपुंगवः।
चकार संहिताः पंच बुद्धिमान्वेदवित्तमः ॥
पंच तस्याभवञ्छिष्या मुद्गलो गोखलस्तथा।
खलीयान्सुतपा वत्सः शैशिरेयश्च पंचमः ॥
प्रोवाच संहितास्तिस्रः शाको वैणो रथीतरः।
निरुक्तं च पुनश्चक्रे चतुर्थं द्विजसत्तमः ॥
तस्य शिष्यास्तु चत्वारः पैलश्चेक्षलकस्तथा।
धीमाञ्छतबलाकश्च गजश्चैव द्विजोत्तमाः ॥

Śaunaka's Charaṇa Vyūha indicates that Śākalya belonged to the fifth generation of Indrapramiti (11050 BCE), the disciple of Paila (11100 BCE). Thus, we can fix the date of Śākalya around 10900 BCE. Śākalya was also the founder of the Śākala branch of Rigveda. Indrapramiti's disciple Bāṣkala (11000 BCE) was the founder of the Bhāṣkala branch of Rigveda.

Yaska's Nirukta is a Bhāṣya on Nighanṭu. He refers to many āchāryas: Agrāyaṇa, Audumbarāyaṇa, Aupamanyava, Aurṇavābha, Kāthakya, Kautsa, Krauṣṭuki, Gārgya, Gālava, Charmaśira, Taithiki, Vārṣāyaṇi, Śatabalākśa, Śākapūṇi, Śākalya, Śākatāyana and Sthūlaṣṭhīvi. Vadhula Anvākhyāna Brāhmaṇa records that Āchārya Saubabhrava, the son of Subabhru, taught Agnyādheya to Yāska and he was also the teacher of Vadhula.[101]

एतद्ध वै सौबभ्रुवो वाधुलाय प्रोच्योवाच प्र न्वै वयं यास्कायाग्न्याधेयमवोचामेति ॥

Yāska assigns 1000 Yugas to the day of Brahma. The concept of Mahāyuga and Manvantara evolved after 6777 BCE. Śaunaka's Brihaddevatā and Rikprātiśākhya quotes Yāska and Yāska refers to Śaunaka's Rikprātiśākhya (6500 BCE) in his Taittirīya Anukramaṇī. The Mahābhārata also refers to Yāska.[102] Seemingly, Yāska and Śaunaka were contemporaries. Therefore, Yāska must be dated around 6500 BCE.

Kalpasūtras of Vedas (7500-6000 BCE)

Kalpasūtras are the books of Vedic rituals. Śrauta, Śulba and Grihya Sūtras are collectively known as Kalpasūtras. Initially, the subject of Śrauta, Śulba and Grihya rituals were integral parts of Brāhmaṇa and Āraṇyaka texts, but later the rules of Śrauta, Śulba and Grihya were codified in Sūtras (aphoristic style) because it was easier to memorize and remember Sūtras.

Kaplasūtras of Rigveda

Kauṣītaka and Śāṅkhāyana were the earliest āchāryas of Rigveda. Kauṣītaka (10900 BCE) was the pupil of Uddālaka Āruṇi (10920 BCE). Kahola (10850 BCE), the pupil of Kauṣītaka, was the teacher of Śāṅkhāyana (10800 BCE). Kauṣītaka and Śāṅkhāyana were the progenitors of the Kauṣītaka -Śāṅkhāyana branch of Rigveda.

Śāṅkhāyana Śrautasūtra and Grihyasūtra (7500 BCE)

Śāṅkhāyana Śrautasūtra is the oldest sūtra of Rigveda. In the Brāhmaṇa-Upaniṣad period (10000-8000 BCE), the subject of Śrauta and Grihya rituals was integral part of Kauṣītaka or Śāṅkhāyana Brāhmaṇa. Later, a descendant of Śāṅkhāyana gotra had codified the Śrauta and Grihya sūtras around 7500 BCE.

While referring to the procedural importance in performance of Vedic rituals, Śāṅkhāyana Śrautasūtra mentions a battle in which the Kurus were driven out of Kurukshetra.[103] Western historians have speculated this battle to be the Mahābhārata War. It is totally absurd to imagine that the Kurus were driven out of Kurukshetra after the Mahābhārata War because Pāndavas were also the Kurus. In fact, Śāṅkhāyana Śrautasūtra refers to an ancient battle that occurred between the Kurus and the Pāñchālas in which the Kurus were driven out of Kurukshetra. Most probably, the early Kurus were driven out of Kurukshetra around 10500 BCE. The Kurus might have migrated westwards to North-central Pakistan. Mahabharata's Adiparva relates that a Pāñchāla king invaded the Kuru kingdom with an army that consisted of ten Akśauhiṇīs. King Saṁvaraṇa had no other option to leave his kingdom and settled on the banks of Indus River.

अभ्ययात् तं च पाञ्चाल्यो विजित्य तरसा महीम् ।
अक्षौहिणीभिर्दशभिः स एनं समरेऽजयत् ॥
ततः सदारः सामात्यः सपुत्रः ससुहृज्जनः ।
राजा संवरणस्तस्मात्पलायत महाभयात् ॥
सिन्धोर्नदस्य महतः निकुञ्जे न्यवसत् तदा ।
नदी विषयपर्यन्ते पर्वतस्य समीपतः ।
तत्रावसन् बहून् कालान् भारता दुर्गमाश्रिताः ॥

The Bāhlīka, Kuru, Pāñchāla, Kosala, Ayodhya (Ikśvāku) and Videha were the major kingdoms (from west to east) in North India during the period 9000-4500 BCE. The later Kurus had emerged as powerful rulers in North India around 4200 BCE. Thus, the later Kurus belonged to the Mahābhārata era (3250-3100 BCE). Therefore, there is no reference of the Mahābhārata War in Śāṅkhāyana Śrautasūtra.

Śāṅkhāyana Śrautasūtra refers to ten different Vedas and links them to ten historical personalities.[104]

	Rishi	**Vedas /Vidyas**
1.	Manu Vaivasvata	Rigveda
2.	Yama Vaivasvata	Yajurveda
3.	Varuṇa Āditya	Atharvaveda (belonged to Gāndharvas)
4.	Soma Vaishṇava	Āngirasaveda
5.	Arbuda Kādraveya	Sarpavidyā (belonged to Nāgas)
6.	Kubera Vaiśravaṇa	Rakśovidyā or Rasovidyā (belonged to Rākśasas)
7.	Asita Dhānvana	Asuravidyā (belonged to Asuras)
8.	Matsya Sāmmada	Itihāsaveda
9.	Tārkśya Vaipaśyata	Purāṇaveda
10.	Dharma Indra	Sāmaveda

Śāṅkhāyana Śrautasūtra mentions Rishi Indrota Śaunaka and King Janamejaya Pārīkśita.[105] It states that Vasiṣṭha was the priest (Purohita) of Bharata King Sudāsa Paijavana.[106] Seemingly, ten Nārāśaṁsa sūktas referred to in this Śrautasūtra were the eulogies of great rishis and kings. Śāṅkhāyana Śrautasūtra also gives the story of Śunaḥśepa and Viśvāmitra.[107] It also refers to the twenty-year cycle of four Yugas (Kali, Dvāpara, Tretā and Krita). Viśvāmitra's cursed sons became Andhras, Pundras, Shabaras and Muchipas.

> तस्य हैकशतं पुत्रा आसुः। पञ्चाशदेव ज्यायांसो मधुच्छन्दसः पञ्चाशत् कनीयांसः। तद्ये ज्यायांसो न ते कुशलं मेनिरे।ताननुव्याजहार। अन्तं वः प्रजा भक्षीष्टेति । त एते आन्ध्राः पुण्ड्राः शबरा मूचीपा इति।

Āśvalāyana Śrautasūtra and Grihyasūtra (6500 BCE)

Aśvala, the son of Rishi Viśvāmitra was the priest of King Janaka (10900 BCE). He was a contemporary of Yājñavalkya III. Aśvala was the progenitor of Āśvalāyana gotra. Traditionally, Āśvalāyanas belonged to Śākala branch of Rigveda and followed Aitareya Brāhmaṇa. Rishi Āśvalāyana, a later descendant of Āśvalāyana gotra, was the pupil of Rishi Śaunaka as indicated by Ṣaḍguruśiṣya in his commentary 'Vedārthadīpikā' on Sarvānukramaṇī (*Śaunakasya cha śiṣyo'bhūd Bhagavān Āśvalāyanaḥ*). Ṣaḍguruśiṣya states that Āśvalāyana wrote Śrautasūtra, Grihyasūtra,

Dharmasūtra and Āraṇyaka (*Dvādaśādhyākam sūtram chatuṣkam Grihyameva cha, Chaturthāraṇyakam cheti hi Āśvalāyanasūtrakam*). According to the tradition recorded by Ṣaḍguruśiṣya, Śaunaka had composed a Śrautasūtra but he destroyed it in favour of the Śrautasūtra written by his pupil Āśvalāyana. Śaunaka and Āśvalāyana together compiled the fourth and fifth chapters of Aitareya Āraṇyaka. Thus, Aitareya Brāhmaṇa and Āraṇyaka also came to be known as Āśvalāyana Brāhmaṇa. Raghunandana's treatise "*Malamāsa-Tattva*" quoted from Āśvalāyana Brāhmaṇa.

In the context of Devatarpaṇa, Rishitarpaṇa and Āchāryatarpaṇa, Āśvalāyana Grihyasūtra refers to the Rishis of Rigveda: Śatārchin Rishis (Rishis of 1st Mandala), Gritsamada (2nd Mandala), Viśvāmitra (3rd Mandala), Vāmadeva (4th Mandala), Atri (5th Mandala), Bhāradwāja (6th Mandala), Vasiṣṭha (7th Mandala), Pragātha Kaṇva (8th Mandala), the Rishis of Pāvamānya Sūktas (9th Mandala) and the Rishis of short & long Sūktas (10th Mandala).[108] Āśvalāyana Grihyasūtra mentions the names of Vedic āchāryas: Sumantu, Jaimini, Vaiśampāyana, Paila, the āchāryas of Sūtras, the āchāryas of Bhāṣyas, Bhārata, Mahābhārata, the āchāryas of Dharma or law, Jānanti, Bāhavi, Gārgya, Gautama, Śākalya, Bābhravya, Māṇḍavya, Māṇḍūkeya, Gārgī Vāchaknavī, Vadavā, Prātitheyi and Sulabhā Maitreyī. It also gives the list of ancient Rigvedic āchāryas from Kahola to Āśvalāyana (Kahola, Kauṣītaka, Mahakauṣītaka, Paingya, Mahāpaingya, Suyajña, Śāṅkhāyana, Aitareya, Mahaitareya, Śākala, Bhāṣkala, Sujātavaktra, Udavāhi, Mahaudavāhi, Saujāmi, Śaunaka and Āśvalāyana).

Western scholars speculated about the reference of the Mahābhārata in Āśvalāyana's Grihyasūtra. In fact, Āśvalāyana was referring to the āchāryas of Rigvedic tradition as Bhārata-Mahābhārata, Kauṣītaka-Mahakauṣītaka, Paingya-Mahāpaingya, Aitareya-Mahaitareya and Udavāhi-Mahaudavāhi. In all probability, Bhārata was a Rājarshi of the Ikśvāku Dynasty. The Rāmāyaṇa informs us that Māndhātā had a son named Susandhi. Susandhi's son was Dhruvasandhi. Dhruvasandhi's son was Bhārata. Bhārata also became a rishi like Māndhātā and Hārīta. Therefore, Bhārata was a great āchārya of Rigveda and Āśvalāyana referred to the Rigvedic branch of Bhārata and Mahābhārata.

The date of Āśvalāyana is closely linked with the date of Rishi Śaunaka. There were many Śaunakas. Āśvalāyana's reference to the rishis of Rigveda indicates the knowledge of Anukramaṇīs of Rishi Śaunaka. Evidently, Āśvalāyana was the pupil of Śaunaka who authored six Anukramanis as well as Charaṇa Vyūha, Brihaddevatā and Rikprātiśākhya. Śaunaka also united the Bāṣkala and Śākala branches of Rigveda. Kātyāyana was also the pupil of Śaunaka. Kātyāyana Śulbasūtra indicates a date around 6500 BCE. Thus, we can fix the date of Śaunaka, Āśvalāyana and Kātyāyana around 6500 BCE.

Kalpasūtras of Śukla or Vājasaneya Mādhyandina Yajurveda

Kātyāyana was the author of Kalpasūtras of Śukla Yajurveda. A Grihyasūtra written by Pāraskara contains two Pariśiṣṭas (appendices) written by Kātyāyana. Most probably, Pāraskara flourished after Kātyāyana around 6400 BCE. Pāraskara also refers to Śaunaka and Baudhāyana.

Kātyāyana Śrautasūtra and Śulbasūtra (6500 BCE)

Kātyāyana Śulbasūtra indirectly indicates the date of Kātyāyana.[109] The sūtra (1.2) translated by Sh. SD Khadilkar as follows:

समे शङ्कुं निखाय। शङ्कुसम्मितया रज्ज्वा मण्डलं परिलिख्य यत्र लेखयोः शङ्क्वग्रच्छाया निपतति तत्र शङ्कू निहन्ति सा प्राची ।

"Having fixed a pole, on a level piece of ground (which is to be measured) and having described a circle by a cord attached to the pole, one should mark the points with pegs, where the shadow of the top of the pole touches (due to the rising sun) the circle, the line joining these pegs is the West to East line.

This would have been true if the sun would have travelled from Due-East to Due-West. But this is not so. The sun would have travelled from the North from 21st December to 21st June called *Udagayana*. During this period, the sun will be closer to Chitrā. The sun is inclined to South or Svāti from 21st June to 21st December. This period is called *Dakśiṇāyana*."

Karkāchārya, the ancient commentator writes on this sūtra 'समे शङ्कुं निखाय' that 'दक्षिणायने तु चित्रां यावदादित्य उपसर्पति। उदगयने स्वातिमेति विषुवतीये त्वहनि चित्रास्वात्योर्मध्य एवोदयः'. Evidently, it indicates that summer solstice was close to Chitrā Nakśatra during the lifetime of

Kātyāyana. Summer solstice was at Chitra Nakśatra around 6500 BCE. Thus, we can fix the date of Kātyāyana around 6500 BCE. Kātyāyana was a contemporary of Śaunaka and Āśvalāyana.

Kalpasūtras of Krishna Yajurveda (7000-6500 BCE)

Krishna Yajurveda has ten Śrautasūtras and nine Grihyasūtras written by Āpastamba, Baudhāyana, Laugākśi or Kāthaka, Vaikhānasa, Vadhula, Mānava, Bhāradwāja, Varāha, Maitra and Hiraṇyakeśi; and seven Śulbasūtras written by Baudhāyana, Āpastamba, Mānava, Hiraṇyakeśi, Laugākśi, Varāha and Vadhula. A Grihyasūtra written by Agniveśya is also available. Seemingly, these sūtras were written around 7000-6500 BCE.

1.	Katha	Katha is a branch of Taittirīya. The disciples of Katha branch had codifies Śrauta and Grihya sūtras.
2.	Laugākśi	Rishi Laugākśi was the founder of a gotra for Kashmiri Brāhmaṇas. His disciples or descendants belonged to the Chārāyaṇīya, Kāthaka and Charaka branches of Krishna Yajurveda. Most probably, Rishi Laugākshi lived around 7000 BCE.
3.	Hiraṇyakeśi	Hiraṇyakeśi, Bhāradwāja and Āpastamba belonged to the Khādikeya branch of Taittirīya Yajurveda. Most probably, Hiraṇyakeśi, Bhāradwaja and Āpastamba lived around 6600 BCE.
4.	Āpastamba	
5.	Bhāradwāja	
6.	Vaikhānasa	Rishi Vaikhānasa belonged to the Taittirīya branch. He might have lived around 7000 BCE.
7.	Maitrāyaṇa	Maitrāyaṇa, Mānava (7000 BCE) and Varāha belonged to the Maitrāyaṇī branch of Yajurveda.
8.	Mānava	
9.	Varāha	
10.	Baudhāyana	Baudhāyana belonged to the Taittirīya branch. He refers to Kaṇva Bodhāyana, Āpastamba and Hiraṇyakeśin in his Dharmasūtra. Therefore, we can fix the date of Baudhāyana around 6500 BCE.

11.	Vadhula	Vadhula was a junior contemporary of Yāska (6500 BCE). His teacher was Saubabhruva. Vadhula also authored "Vadhula Anvākhyāna Brāhmaṇa".
12.	Agniveśya	Agniveśya probably belonged to the Charaka branch of Krishna Yajurveda.

Kalpasūtras of Sāmaveda (7100-6500 BCE)
Five Śrautasūtras (Nidānasūtra of Patañjali, Maśaka, Lātyāyana, Drāhyāyana and Jaiminīya) and associated texts (Kśudra, Upagrantha, Pañchavidha, Tandālakśaṇa, Anupada, Anuṣṭotra and Kalpānupāda) belonged to Sāmaveda. There are four Grihyasūtras [Drāhyāyana (also known as Khādira), Kauthuma, Gobhila and Jaiminīya] of Sāmaveda. Seemingly, Maśaka, Nidāna and Lātyāyana sūtras are the oldest.

Maśaka Śrautasūtra (7100 BCE)
Maśaka was one of the earliest āchāryas of Sāmaveda. Seemingly, a later āchārya of the Maśaka branch compiled Śrautasūtras around 7100 BCE.

Nidāna Sūtra of Patañjali (7500-7000 BCE)
Patañjali was the author of Nidānasūtra. It refers to Maśaka's Ārṣeyakalpa. Nidānasūtra mentions many scholars of Cḥandas, like Dhānañjayya, Gautama, Śāṇḍilyāyana, Śāṇḍilya and Vārṣagaṇya. Nidānasūtra refers to only twenty-seven Nakśatras, which means Abhijit Nakśatra was dropped from the list of Nakśatras during the time of Patañjali.[110]

Abhijit was at celestial North Pole around 12000 BCE but its declination gradually reduced from 85-degree (12000 BCE) to 65-degree (9000 BCE) causing it to drop down to horizon after 9000 BCE. Seemingly, Abhijit had gone below the horizon around 9000-8000 BCE. Thus, Abhijit was excluded from the scheme of twenty-eight Nakśatras as well as the scheme of twenty-seven Nakśatras. Taittirīya Saṁhitā (8800 BCE) gives the list of twenty-seven Nakśatras but follows the traditional list of twenty-eight Nakśatras. It seems Abhijit Nakśatra was dropped from the list of Nakśatras around 8000 BCE. Interestingly, Nidānasūtra indicates

that Udagayana (from winter solstice to summer solstice) had six months and nine days.

> अथाष्टादशभिर्ज्यायानादित्यसंवत्सर एव तैयगयनिको भवति। आदित्यः खलु शश्वदेकदा षण्मासानुदङ्गेति नव चाहानि। तथा दक्षिणा॥

Considering average 29.5 days per month, the half year of Udagayana (from winter solstice to summer solstice) consisted of six months (29.5 x 6 = 177 days) and nine days, i.e., a total 186 days. The following data indicates that Nidānasūtra was written after 7500-7000 BCE.

	WS to SS	**SS to WS**
1000 BCE	185.21	180.04
2000 BCE	186.08	179.17
3000 BCE	186.71	178.54
4000 BCE	186.98	178.26
5000 BCE	186.48	178.76
6000 BCE	186.48	178.75
7000 BCE	186.25	179.00
8000 BCE	185.84	179.41

Nidānasūtra also refers to the twenty-year cycle of four Yugas (Kali, Dvāpara, Tretā and Krita).[111] The concept of Mahāyuga and Manvantara was introduced after 6777 BCE. Therefore, Nidānasūtra must be dated before 6777 BCE.

Lātyāyana Śrautasūtra (7000 BCE)

Lātyāyana mentions Maśaka's Ārṣeyakalpa and also refers to a similar procedure of Sārasvata Satra as given in Ṣadviṁśa Brāhmaṇa. Sarasvati was lost at Vinaśana close to Kurukshetra and used to flow westwards from Vinaśana. Lātyāyana states that the ritual must be performed on the southern banks of Sarasvati River. Lātyāyana also indicates that Driṣadvatī reduced to being a seasonal river before the lifetime of Āchārya Dhānañjayya (7500 BCE).

Gobhila Grihyasūtra (7100 BCE)

The chronological order of Sāmaveda āchāryas given in Vaṁśa Brāhmaṇa indicates that Gobhila, lived around 7500-7100 BCE.

Drāhyāyana Śrautasūtra (6700 BCE)

Drāhyāyana is the later Āchārya of Sāmaveda. His sūtra also refers to the similar procedure of Sārasvata Satra as given in Lātyāyana Śrautasūtra.

Kalpasūtras of Atharvaveda (7000-6500 BCE)

Vitāna Śrautasūtra and Kauśika Grihyasūtra belong to the tradition of Atharvaveda. These sūtras were probably compiled around 7000-6500 BCE.

Dharmasūtras of Vedas (7000-5000 BCE)

Dharmasūtras are also part of Kalpasūtras. Dharma was also a deity in Vedic times. Probably, an ancient rishi or king had the name of Dharma. According to Medhātithi, five Dharmas – Varṇadharma, Aśramadharma, Varṇāśramadharma, Naimittikadharma and Guṇadharma – are the main subject of Dharmasūtras. Mānava Dharmasūtra (7000 BCE) was one of the earliest Dharmasūtras but it was rewritten as Manu Dharmaśāstra, also known as Manusmriti, around 6000 BCE. The original Mānava Dharmasūtra is not available today. Yājñavalkyasmriti indicates that Atri, Yama, Hārīta, Dakśa, Yājñavalkya, Uśanas, Aṅgiras, Saṁvarta, Śatapatha, Kātyāyana and Brihaspati wrote Dharmasūtras. Only Dharmasūtras of Vaikhānasa (7000 BCE), Gautama (6700 BCE), Hiraṇyakeśi (6600 BCE), Āpastamba (6600 BCE) Baudhāyana (6500 BCE), Vishnu (6500 BCE) and Vasiṣṭha (5650 BCE) are available today.

Mānava Dharmasūtra (7000 BCE), Gautama Dharmasūtra (6400 BCE) and Hārīta Dharmasūtra (6400 BCE)

The śloka "*Krite tu Mānavo Dharmaḥ Tretāyām Gautamaḥ smritaḥ*" indicates that Mānava Dharmasūtra was written before 6777 BCE and Gautama Prajāpati wrote his Dharmasūtra in the beginning of Tretā Yuga. Gautama is referred to in the Dharmasūtras of Āpastamba and Baudhāyana. Manusmriti and Yājñavalkya Smriti also refers to Gautama.

Āpastamba Dharmasūtra (6600 BCE)

Āpastamba quotes Kaṇva, Kauśika, Kautsa, Gautama, Puṣkarasādi, Vārṣyāyaṇi, Śvetaketu and Hārīta.

Baudhāyana Dharmasūtra (6500 BCE)

Baudhāyana refers to Aupajaṅghani, Gautama Prajāpati, Kaśyapa, Manu and Maudgalya. Śabara Swāmi Bhāṣya on Pūrva Mīmāṅsā (1.3.3) refers to Baudhāyana Dharmasūtra.

Vishnu Dharmasūtra (6200 BCE)

Vishnu Dharmasūtra belongs to the Katha branch of Krishna Yajurveda. It contains 100 chapters and is written in mixed prose and verse. It also contains few verses of Manusmriti, Yājñavalkyasmriti and Bhagavadgītā. Seemingly, someone from Bhāgavatas added these verses in Vishnu Dharmasūtra during the Gupta period.

Vasiṣṭha Dharmasūtra (5650 BCE)

Most probably, Vasiṣṭha of the Rāmāyaṇa era (5677-5577 BCE) was the author of Vasiṣṭha Dharmasūtra. He refers to Manu, Gautama, Yama and Prajāpati. He also refers to the Dharmasūtra written by Bhāllavin. Śatapatha, Taittirīya, Maitrāyaṇīya Brāhmaṇas are referred to in Vasiṣṭha Dharmasūtra. While giving the geographical information of the land of Brahmavarchasa (India), Vasiṣṭha and Bhallavi Dharmasūtras state that starting from Sindhu River in the West, as far as Krishna Mriga (blackbuck) grazes, the land is called Brahmavarchasa (*Yāvad krishnamrigo vicharati tad Brahmavarchasam*). Ancient Indians knew that blackbuck is only found in India, Nepal and Pakistan. It indicates that ancient Indians also had rough knowledge of fauna found in foreign lands.

Uśanas Dharmasūtra (5000 BCE)

It refers to Vasiṣṭha, Gautama, Hārīta and Śaunaka. Mudrārākśasam speaks of Auśanasī Danḍanīti.

Upavedas

Śaunaka's Charaṇa Vyūha (6500 BCE) mentions that according to Veda Vyāsa or Skanda, Āyurveda of Rigveda, Dhanurveda of Yajurveda, Gāndharva Veda of Sāmaveda and Arthaśāstra of Atharvaveda were known as Upavedas. Cḥāndogyopaniṣad refers to Āyurveda as Bhūtavidyā, Dhanurveda as Kśatravidyā and Arthaśāstra as Nidhi. Sāmagāna (singing of Sāmaveda verses) was an integral part of Vedic

rituals since the early Vedic period. Probably, Gāndharvas had better skills and knowledge of music. Therefore, the music theory of Vedic times came to be known as Gāndharvaveda.

Atri, Dhanvantari, Kaśyapa and Atharvan were the founders of Ayurvedic science in India. The work of Rishi Atharvan and his disciples is limited to Atharvaveda. Atri was the first teacher of Ātreya or Charaka Saṁhitā, Kaśyapa was the first teacher of Kāśyapa Saṁhitā and Dhanvantari was the first teacher of Dhanvantari or Suśruta Saṁhitā. It is difficult to pinpoint the exact authorship and the time of these Saṁhitās because they were periodically updated.

Āyurveda: Ātreya Saṁhitā or Charaka Saṁhitā

According to Charaka Saṁhitā, Brahma passed on the knowledge of Āyurveda through Dakśa Prajāpati, Aśvinī Kumāras and Indra to Rishi Atri. Rishi Punarvasu Ātreya, known as Krishna Ātreya, a descendant of Atri, had six disciples: Agniveśa, Bhela, Jatūkarṇa, Parāśara, Hārīta and Kśārapāṇi. We can roughly fix the date of Agniveśa around 11180 BCE. As stated in the Mahābhārata, Krishna Ātreya was the founder of Āyurveda.

Agniveśa (11180 BCE) was the first who wrote a treatise on Āyurveda. Seemingly, the descendants of Agniveśa updated the treatise around 9000 BCE and it came to be known as Ātreya Saṁhitā. Probably, Bhela and Hārīta also wrote Bhelasaṁhitā and Hārītasaṁhitā respectively. The Charakas were the disciples of Vaiśampāyana (11000-10900 BCE). Charaka was a famous branch of Krishna Yajurveda. Most probably, Patañjali (7200 BCE), also known Charaka (belonged to the Charaka Śākhā), elaborated, recompiled and updated Ātreya Saṁhitā of Agniveśa. Thus, Ātreya Saṁhitā became popular as Charaka Saṁhitā. Most probably, Patañjali was also the author of Nidānasūtra of Sāmaveda.

Driḍhabala, the son of Kapilabala, recompiled and updated the text of Charaka Saṁhitā. Driḍhabala belonged to the city of Pañchanadapura, close to Kashmir. In all probability, he was the royal phycisian of Kushana King Kanishka. Therefore, we can fix the date of Driḍhabala around 1150-1100 BCE.

Dhanvantari (10950 BCE) and Suśruta Saṁhitā

It is well known that Kāshi King Divodāsa Dhanvantari was the founder of a branch of Āyurveda. The genealogy of Dhanvantari is given in Purāṇas:

		In CE
1.	Purūravā	11240 BCE
2.	Ayu	11220 BCE
3.	Nahuṣa	11200 BCE
4.	Kśatravriddha	11175 BCE
5.	Śunahotra	11150 BCE
6.	Kāśa	11110 BCE
7.	Kāśya	11070 BCE
8.	Dīrghatapasa	11040 BCE
9.	Dhanva	11000 BCE
10.	Dhanvantari – Divodāsa	10950 BCE

Seemingly, Dhanvantari, Ātreya, Kaśyapa and Bharadwāja – the founders of Āyurveda branches – were all contemporaries. Dhanvantari had many disciples, like Suśruta, Aupadhenava, Vaitaraṇa, Aurabhra, Pauṣkalāvata, Karavirya, Gopurarakśita, Bhoja and more. Suśruta (10900 BCE) was the first who wrote a treatise on Dhanvantari's Āyurveda. Most probably, Suśruta's descendants had compiled Suśruta Saṁhitā around 9000 BCE. Some glimpses of Suśruta Saṁhitā could be found in Śatapatha Brāhmaṇa (8800 BCE). The Mahābhārata tells us that Suśruta was the son of Rishi Viśvāmitra. Kātyāyana (1670-1580 BCE), the author of Vārtikas on Pāṇini Sūtras, mentions Suśruta Saṁhitā. In all probability, Suśruta Saṁhitā of 9000 BCE was recompiled and updated during the period of Tretā Yuga (6777-5577 BCE). This updated Suśruta Saṁhitā had five books (Sūtrasthāna, Nidānasthāna, Śarīrasthāna, Kalpasthāna and Chikitsāsthāna) and 120 Chapters.

Dalhaṇa (5th century CE), a commentator on Suśruta Saṁhitā mentions that Nāgārjuna redacted and updated Suśruta Saṁhitā. Nāgārjuna added Uttaratantra that contains Śālākya, Kaumārabhritya, Kāyachikitsā and Bhūtavidyā. Thus, the available Suśruta Saṁhitā has 186 chapters. Most probably, Nāgārjuna of Kashmir might have updated Suśruta Saṁhitā but we have no details of his lifetime.

Kāśyapa Saṁhitā (~6700-6500 BCE)

Kāśyapa Saṁhitā is also known as Vriddha Jīvaka Tantra. Vātsya was the author of the extant text. The main subject of this Saṁhitā is Kaumārabritya (Pediatrics). Kaśyapa, the disciple of Indra, was the founder of Kaśyapa branch of Āyurveda. Bharata Nātyaśāstra indicates that Vātsya was a son of Bharata Muni.

It is extremely difficult to fix a date of the available Kāśyapa Saṁhitā. It refers to Sarasvati River as Pratīchigā (flowing towards West), which clearly indicates that Vātsya wrote this Saṁhitā much before the Mahābhārata era. Sarasvati River had dried up around 3000 BCE. Interestingly, there is a lot of geographical information in the chapter 'Bhojana-Kalpa' of Kalpasthāna. According to Kāshyapa Saṁhitā, Madhyadeśa was bound by the River Sarasvati in Kurukshetra, Vindhya and Antarveda (Ganga-Yamuna doab). Pāñchāla, Kuru, Matsya, Yaudheya, Pātacchara, Kunti and Śūrasena were the janapadas of Madhyadeśa. The janapadas of Pūrva Deśa were Kumāravartini, Kativarṣa, Magadha, Tāmralipta, Riṣabha Dvīpa, Paunḍravardhanaka, Mrittkavardhamānaka, Karvata, Mātaṅga, Chīra, Priyaṅgu, Kosala, Kaliṅga and Priṣṭhapuraka. The janapadas of Dakśiṇa Deśa were Kāñchīpada, Navadhvana, Kavira, Kumuda Rājya, Chiripali, Chīra Rajya, Pulinda, Vānavāsi, Karaghāta, Videha, Kāntāra, Varāha and Ābhīra. It refers to Sārasvata, Sindhu, Sauviraka, Kāshi, Daśārṇa, Dāseraka, Rāmana, Kashmira, Śatasāra and Bāhlīka regions. It also mentions China and Apara China countries. The geographical information also indicates a date before the Mahābhārata War.

Brihat Trayī and Laghu Trayī of Āyurveda

Ancient works of Āyurveda have been classified into two groups: Brihat Trayī and Laghu Trayī. Charaka Saṁhitā, Suśruta Saṁhitā and Aṣṭāṅga Saṅgraha are the Brihat Trayī (greater triad) and Mādhava Nidāna, Śārṅgadhara Saṁhitā and Bhāvaprakāśa are the Laghu Trayī (lesser triad). According to tradition, Vāgbhaṭa's Aṣṭāṅgasaṅgraha and Aṣṭāṅgahridaya were originally written in 7000 sūtras. Seemingly, another Vāgbhaṭa, son of Simhagupta, grandson of Vāgbhaṭa, disciple of Avalokita and a resident of Sindh, had recompiled these texts during the period of Kushanas. Most probably, the ancient Vāgbhaṭa was the disciple of one Charaka Āchārya.

Mādhavakara, the son of Indukara, was the author of Rogaviniśchaya or Mādhavanidāna. Śārṅgadhara Saṁhitā and Bhāvaprakāśa are also ancient texts of Āyurveda.

Vasiṣṭha's Dhanurveda Saṁhitā (5600 BCE)

Dhanurveda, also known as Kśatravidyā, has been an important subject of study since Vedic period. Vasiṣṭha's Dhanurveda Saṁhitā and Śukranīti are the oldest known texts of Dhanurveda. Vasiṣṭha associated Dhanurveda with both Yajurveda and Atharvaveda. Agni Purāṇa and Sāmrājya Lakshmī Pīthikā, a Śaiva tantra text, also contain some chapters on Dhanurveda.

Most probably, Vasiṣṭha of Tretā Yuga must have compiled Dhanurveda Saṁhitā around 6700 BCE. Some verses of the available Vasiṣṭha's Dhanurveda Saṁhitā appear to be reconstructed by someone based on fragments of original Dhanurveda, around 1000-1400 BCE because one śloka uses the word "Gadh" for fort. The word "Cḥatrapati" is also found in this text. However, Dhaurveda has a very ancient tradition. Dhanurveda existed during the Rāmāyaṇa and Mahābhārata eras. Nārada asks Yudhiṣṭhira if Dhanurveda Sūtra was studied in his house.[112] Evidently, a sūtra text of Dhanurveda was extant during the Mahābhārata era. The Mahābhārata narrates ten aṅgas of Dhanurveda: Ādāna, Sandhāna, Mokśaṇa, Vinivartana, Sthāna, Muṣṭi, Prayoga, Prāyaśchitta, Mandala and Rahasya.[113] According to Agni Purāṇa, Yantramukta, Pāṇimukta, Muktasandhārita, Amukta and Bāhuyuddha are the aṅgas of Dhanurveda.[114]

Seemingly, there were many āchāryas of Dhanurveda. Vasiṣṭha's Dhanurveda Saṁhitā refers to Viśvāmitra, Paraśurāma, Kaśyapa, Parāśara, Śārṅgadhara, Bhārata and Garga. Agastya also taught Dhanurveda to Agniveśa. According to Ādi Parva of the Mahābhārata, Rishi Śaradvān was an exponent of Dhanurveda. He taught it to Kripa. There is also a treatise named Śiva Dhanurveda that refers to Vyāsa (*Bhagavato Vyāsasya*).

Śukranīti (5000 BCE)

Śukranīti associated Dhanurveda with only Yajurveda. Śukrāchārya was also known as Uśanas. Uśanas Dharmasūtra refers to Gautama

Dharmasūtra. Most probably, the descendants of Śukrāchārya preserved the teachings of Śukrāchārya and compiled Uśanas Dharmasūtra after the Rāmāyaṇa period, around 5000 BCE. The Mahābhārata also refers to Śukranīti. Kāmandaka Nītisāra, Kautilya Arthaśāstra and Pañchatantra quoted verses of Śukranīti. Evidently, Śukranīti was compiled before the Mahābhārata period.

Gāndharva Veda

Classical music and dance is the subject of Gāndharva Veda. Brahma and Nārada were the founders of the science of Gāndharva Veda. According to tradition, Śiva was also the originator of Nāṭya (Dance), Gīta (Music) and Vāditra (musical instruments), as also stated in the Mahābhārata's Śānti Parva (*Gītavāditratattvajño Gītavādanakapriyaḥ*).[115] Gāndharva Veda is associated with Sāmaveda. Seemingly, Gāndharvas were the first who mastered the art of music and established it as an important subject of study. Therefore, the science of music and dance came to be known as Gāndharva Veda.

Naṭasūtras of Śilālin and Kriṣāśva were the earliest texts of Gāndharva Veda as referred to by Pāṇini. Nārada, Bharata, Dattila, Nandikeśvara and Mātaṅga were the early āchāryas of Gāndharva Veda.

Nārada (6600-6000 BCE)

Nārada was the founder of Gāndharva Śāstra as indicated by Dattila. A descendant of Nārada might have written "*Sangīta Makaranda*" in Tretā Yuga. Sangita Makaranda refers to Bharata (*Ya sa prakrti-vijñena Bharatena cha charchitā । vikruti cha niṣādādi ṣadjāntara-svara pūritaḥ ॥)*. It also refers to ancient Gāndharvagrāma.

Bharata's Nāṭyaveda or Nāṭyaśāstra (6700-6000 BCE)

Bharata Muni wrote Nāṭyaveda or Nāṭyaśāstra at the onset of Tretā Yuga of Vaivasvata Manu and taught it to his sons. I have already established that the Tretā Yuga commenced around 6777 BCE. Therefore, we can fix the date of Bharata Muni around 6700-6500 BCE. Nāṭyaśāstra also indicates that Devas, Dānavas, Gāndharvas, Yakśas, Rākśasas and Nāgas had their kingdoms in Jambūdvīpa during his lifetime. The kingdoms of

Rākśasas and Dānavas declined after the Rāmāyaṇa era (5677-5577 BCE).

> पूर्वं कृतयुगे विप्रा वृत्ते स्वायंभुवेऽन्तरे ।
> त्रेतायुगेऽथ सम्प्राप्ते मनोर्वैवस्वतस्य तु ॥
> ग्राम्यधर्मप्रवृत्ते तु कामलोभवशं गते ।
> ईर्ष्याक्रोधादिसंमूढे लोके सुखितदुःखिते ॥
> देवदानवगन्धर्वयक्षरक्षोमहोरगैः ।
> जम्बुद्वीपे समाक्रान्ते लोकपालप्रतिष्ठिते ॥
> महेन्द्रप्रमुखैर्देवैरुक्तः किल पितामहः ।
> क्रीडनीयकमिच्छामो दृश्यं श्रव्यं च यद्भवेत् ॥

Seemingly, the available Bharata Nāṭyaśāstra had been recompiled and added some verses related to 100 sons of Bharata Muni by the descendant of Bharata Muni around 6000 BCE. It is stated in Nātyaśāstra that Bharata received the knowledge (revelation) of Nāṭyaveda from Pitāmaha Brahma and taught it to more than 100 sons. Undoubtedly, the 100 sons were the disciples of Bharata Muni, which is evident from the different gotra names of disciples. The names of 105 disciples of Bharata Muni as mentioned in Bharata Nātyaśāstra:

"Śānḍilya, Vātsya, Kohala, Dattila, Jatila, Āmbaṣṭa, Tanḍu, Agniśikhā, Saindhava, Pulomā, Śādvali, Vipula, Kapiñjali, Bādari, Yama, Dhūmrāyaṇa, Jambūdhvaja, Kākajaṅgha, Svarṇaka, Tāpasa, Kaidāri, Śālikarṇa, Dīrghagātra, Śālika, Kautsa, Tānḍāyani, Piṅgala, Chitraka, Vandhula, Bhallaka, Muṣṭhika, Saindhavāyana, Taitila, Bhārgava, Śuchi, Bahula, Abudha, Budhasena, Pāndukarṇa, Sukerala, Rijuka, Mandaka, Śambara, Vanjala, Māgadha, Sarala, Kartā, Ugra, Tuṣāra, Pārṣada, Gautama, Bādarāyaṇa, Viśāla, Śabala, Sunāma, Meṣa, Kāliya, Bhramara, Pithamukha, Muni, Nakhakutta, Aśmakutta, Ṣatpada, Uttama, Pāduka, Upānaha, Śruti, Chāśasvara, Agnikunda, Ajyakunda, Vitandya, Tānḍya, Kartarākśa, Hiraṇyākśa, Kuśala, Dussaha, Lāja, Bhayānaka, Bībhatsa, Vichakśaṇa, Pundrākśa, Pundranāsa, Asita, Sita, Vidyujjihva, Mahājihva, Śālaṅkāyana, Śyāmāyana, Māṭhara, Lohitāṅga, Samvartaka, Pañchaśikha, Triśikha, Śikha, Śaṅkhavarṇamukha, Ṣanda, Śaṅkukarṇa, Śakranemi, Gabhasti, Aṅśumāli, Śaṭha, Vidyuta, Śātajaṅgha, Raudra and Vīra."

There were many Bharatas. The earliest Bharata was the son of Riṣabhadeva. The genealogy of Bharata I as given in Purāṇas (Svāyambhuva

Manu – Priyavrata – Agnīdhra – Nābhi – Riṣabha – Bharata). According to Bhāgavata Purāṇa, Riṣabhadeva's son Bharata I married Pañchajani, the daughter of Viśvarūpa.[116] He had five sons: Sumati, Rāṣṭrabhrita, Sudarśana, Āvaraṇa and Dhūmraketu. According to Rāmāyaṇa, Sumati was the descendant of Ikśvāku. Ikśvāku had a son named Viśāla from Queen Ālambuṣā. Viśāla founded the city of Vaiśāli. Viśāla's son was Hemachandra, Hemachandra's son was Suchandra, Suchandra's son was Dhūmrāśva, Dhūmrāśva's son was Sriñjaya, Sriñjaya's son was Sahadeva, Sahadeva's son was Kriṣāśva, Kriṣāśva's son was Somadatta, Somadatta's son was Kākustha and Kākustha's son was Sumati. Interestingly, Sumati was the fifth Tirthaṅkara of Jainism. Bharata I was the king of Ajanābha Kingdom. The same came to be known as Bhārata Kingdom after Bharata I (*Ajanābham etadvarṣam Bhāratamiti Yadārabhya vyapadiśanti* ।).[117]

Bharata II (13450 BCE) was the son of Duṣyanta and Śakuntala. King Bharata III (11050 BCE) was the descendant of Yayāti and his son Puru. Jaḍa Bharata or Bharata IV (11000 BCE) was the contemporary of King Rāhūgaṇa of Sauvira janapada and Kapila Maharshi. Rāhūgaṇa's son Gautama Rāhūgaṇa was the contemporary of King Videha Mādhava. Probably, Jaḍa Bharata was the son of Dhruvasandhi, the grandson of Susandhi and the great grandson of Ikśvāku King Māndhātā. Bharata IV became a great rishi and founded the lineage of Bharata Rishis. Seemingly, Bharata Muni of Tretā Yuga was the descendant of the lineage of Bharata IV.

Dattilam (6600 BCE)

Dattila was the pupil of Bharata Muni. He authored "Dattilam", the earliest extant text of Gāndharvaśāstra. Dattila clearly mentions that Nārada was the founder of Gāndharavaśāstra. He also refers to his contemporary scholars, Kohala (he was the author of Kohaliya Abhinaya Śāstra) and Viśākhila. Dattilam discusses Grāma (parent tonal frameworks) and twenty-two Śrutis (micro-tonal intervals) placed in one octave space. Bharata's Nāṭyaśāstra (1.26) indicates Dattila to be the son of Bharata Muni. Therefore, we can fix the date of Dattila around 6600 BCE. Uttarakānda of Rāmāyaṇa also mentions Dattila.[118]

Nandi or Nandikeśvara (5800 BCE)

Nandikeśvara was the author of Abhinaya Darpaṇa and Bharatārṇava. He referred to Bharata Muni and his Śāstra several times. According to Liṅgapurāṇa, Nandikeśvara was a son of blind woman named Śilāda. He became the attendant of Śiva. Mātaṅga Muni's Brihaddeśī refers to Nandikeśvara. Chapter Seven of Abhinaya Darpaṇa describes all the 108 traditional Tālas. Therefore, Nadikeśvara must be dated before Mātaṅga Muni and after Bharata Muni and Dattila. Some scholars have identified Nandīśvara, the author of Prabhākara Vijaya, as Nandikeśvara – but Nandīśvara lived after Prabhākara, the disciple of Kumārila Bhaṭṭa. Therefore, Nandīśvara cannot be identified with Nandikeśvara.

Brihaddeśī of Mātaṅga Muni (5650 BCE)

According to Rāmāyaṇa, Śabarī was the pupil of Mātaṅga Muni who was residing at the foot of Riṣyamūka (Sringeri) Hill. The Rāmāyaṇa also indicates that the Ashrama of Mātaṅga Muni was located on the banks of Pampā Lake.[119] The Mahābhārata also refers to Mātaṅga Muni.[120] Kalidāsa's Raghuvaṁśa also indicates that Mātaṅga Muni was the contemporary of the kings of Raghu Dynasty.[121]

Most probably, Mātaṅga Muni of the Rāmāyaṇa era was the author of Brihaddeśī. Mātaṅga refers to Nārada, Bharata, Kohala, Dattila and Nandikeśvara. He mentions "Deśabhāṣā", a local language of South India.

Arthaśāstra of Viśālākśa

Śaunaka's Charaṇa Vyūha associates Arthaśāstra with Atharvaveda. According to tradition, Bhāradwāja and Viśālākśa were the earliest Āchāryas of Arthaśāstra. Viśālākśa Danḍanīti or Bahudanḍaka was the earliest text on Arthaśāstra. Mudrārākśasam of Viśākhadatta referred to Auśanasī Danḍanīti. Kāmandaka Nītisāra, Yājñavalkya Smriti, Mahābhārata's Śāntiparva, and Vātsyāyana Kāmasūtra refer to the Arthaśāstra of Brihaspati.[122] Many verses from Nāradīya Arthaśāstra have been quoted in Vālmiki Rāmāyaṇa and Mahābhārata. Kautilya Arthaśāstra refers to Bārhaspatya, Auśanasa, Mānava, Parāśara and Ambhīya Arthaśāstras. It also quotes Bhāradwāja, Viśālākśa, Piśuna, Kaunapadanta, Vathavyadhi and Bahupadantiputra.

Mahābhārata's Śāntiparva refers to the Arthaśāstras authored by Viśālākśa, Śukrāchārya (Śukra Nīti), Indra, Manu Prāchetasa (Manu Nīti), Bhāradwāja, Gauraśira, Kāmandaka (Kāmadakīya Nītisāra) and others.[123] Viśālākśa was either another name of Śiva or a rishi belonging to the lineage of Śiva. In all probability, all āchāryas of Arthaśāstra mentioned in the Mahābhārata lived before the Rāmāyaṇa era. Vidura of the Mahābhārata era also wrote a Nītiśāstra. Later, Chāṇakya or Kautilya wrote a treatise on Arthaśāstra and a Nītiśāstra.

Kāmandaka Nītiśāstra and Kāmandaka Nītisāra

Rishi Kāmandaka was the author of a Nītiśāstra that is not available today. The Mahābhārata refers to Rishi Kāmandaka and his dialogue with King Aṅgāriṣṭha.[124] Evidently, Kāmandaka and Aṅgāriṣṭha lived before the Mahābhārata era; Kāmandaka lived even before the Rāmāyaṇa era. King Aṅgāra was the king of Gāndhāra and a contemporary of King Yuvanāśva, father of Māndhātā. Most probably, Aṅgāriṣṭha was also a later king of Gāndhāra of pre-Rāmāyaṇa era.

An unknown scholar wrote "Kāmandaka Nītisāra" during the reign of King Chandragupta. He wrote Kāmandaka Nītisāra based on ancient text Kāmandakīya Nītiśāstra and Kautilya Arthaśāstra. He mentioned the name of Vishnugupta (Chāṇakya). Evidently, he lived after the Maurya period. A Sanskrit text called "Kāmandakīya Nīti" was available in Bali of Indonesia in ancient times but it is not known whether it was the original Kāmandakīya Nītiśāstra or Kāmandaka Nītisāra. In all probability, the King Chandragupta referred to in Kāmandaka Nītisāra belonged to the Nāga dynasty who conquered up to Bāhlīka (beyond Takśaśilā) and erected the Iron Pillar at Delhi. He was well known as Sandrokottus in Greek sources and a contemporary of Alexander. I have critiqued the chronology of western kingdoms in my book titled "*The Origin of the Christian Era: Fact or Fiction*" and conclusively established that there is a chronological error of 660 years in the world history. In fact, Jesus was born on 10th Jan 660 BCE and not in 1 CE. Accordingly, I have fixed the date of Alexander around 990-982 BCE.

Interestingly, Greek legends relate the story of an Indian philosopher who lived in the woods of Takśaśilā. Aristotle told Alexander about

the fame of this Indian philosopher known as Dandamis. Firdausi's *Shahnama* refers to the same legend but names the Indian philosopher as Mandanes. When Alexander occupied Takśaśilā, he sent Onescratus to bring Dandamis to his court but Dandamis refused to meet Alexander. Finally, Alexander went to the woods of Takśaśilā to meet Dandamis, the Indian philosopher. Since he was the author of Kāmandaka Nītisāra, therefore, Persian sources probably referred to him as Mandanes. In all probability, Dandamis or Mandanes was the author of Kāmandaka Nītisāra. Seemingly, his name was Danḍiswāmi, which was referred to as Dandamis in Greek sources. Thus, we can fix the date of the author of Kāmandaka Nītisara around 1050-960 BCE.

Dharmaśāstras

Dharmaśāstras originated from Dharmasūtras of Kalpa. All Smriti treatises are collectively known as Dharmaśāstras. Seemingly, traditional Dharmasūtras have been recompiled and rewritten in ślokas during Tretā Yuga (6777-5577 BCE), Dvāpara Yuga (5777-3177 BCE) and the beginning of Kaliyuga (3177-2500 BCE). According to Yājñavalkya Smriti, Manu, Atri, Vishnu, Yājñavalkya, Hārīta, Uśanas, Āṅgiras, Yama, Āpastamba, Saṁvarta, Kātyāyana, Brihaspati, Parāśara, Vyāsa, Śaṅkha, Likhita, Dakśa, Śātātapa, Gautama and Vasiṣṭha are the promulgators of Dharmasūtras.

A total of thirty-two Smriti treatises – Āṅgirasa, Veda Vyāsa, Āpastamba, Dakśa, Vishnu, Yājñavalkya, Śaṅkha, Likhita, Brihaspati, Atri, Kātyāyana, Parāśara, Manu, Auśanasa, Hārīta, Gautama, Yama, Saṁvartta, Kaśyapa, Pulastya, Viśvāmitra, Mārkandeya, Āśvalāyana, Nārāyaṇa, Bhāradwāja, Vyāghrapāda, Dālbhya, Prajāpati, Śātātapa, Baudhāyana, Lohita and Riṣyaśriṅga – are available today. We have already discussed the dates of these rishis except Śaṅkha, Likhita, Mārkanḍeya, Śātātapa and Lohita.

Manusmriti (5000-4500 BCE)

Manusmriti originated from Mānava Dharmasūtra. The extant Manusmriti refers to the Chaturyuga of 12000 Years.[125] I have not found the concept of Chaturyuga of 12000 years in Dharmasūtras. Seemingly, the concept

of a Yuga cycle of 1200 years evolved after 6777 BCE and the concept of divine Yuga of 12000 years evolved after the Rāmāyaṇa era (5677-5577 BCE). Manusmriti refers to the Licchạvis. The progenitor of the Licchạvi was the eighth descendant of Sri Rāma. Evidently, the extant Manusmriti was finally recompiled after the Rāmāyaṇa era around 5000-4500 BCE.

Śaṅkha, Likhita and Pārāśara Smritis

It is stated in Pārāśara Smriti that Manu Dharma was followed in Krita Yuga, Gautama Dharma in Tretā Yuga, the Dharma of Śaṅkha and Likhita in Dvāpara Yuga and Pārāśara Dharma in Kaliyuga. Evidently, the extant Pārāśara Smriti was finally recompiled in the early centuries of Kaliyuga. The Mahābhārata relates the story of rishi brothers, Śaṅkha and Likhita.[126] They were the contemporaries of Rajarshi King Sudyumna. Rishi Śaṅkha Yāmāyana was the author of the fifteenth Sūkta of the tenth Mandala of Rigveda. Rishi Śāṅkhāyana, the founder of Śāṅkhāyana branch of Rigveda, was the descendant of Śaṅkha. Therefore, Śaṅkha and Likhita might have flourished around 11200 BCE.

Rishi Mārkanḍeya (11100 BCE)

Mārkanḍeya was the contemporary of Rishi Nārāyaṇa. Most probably, Rishi Nārāyaṇa was the author of Mahānārāyaṇīya Upaniṣad. Rishi Mārkanḍeya had narrated his Purāṇa to Jaimini. Seemingly, Rishi Mārkanḍeya was the contemporary of Jaimini (11100 BCE), the pupil of Veda Vyāsa (11180-11050 BCE).

Lohita and Śātātapa

Rishi Lohita was the founder of a sub-lineage of Āṅgirasa gotra. We have no information about Rishi Śātātapa. The last śloka of Śātātapa Smriti indicates that Rishi Śarabhaṅga was the pupil of Śātātapa.[127]

> इति शातातपप्रोक्तो विपाकः कर्मणामयम् ।
> शष्याय शरभङ्गाय विनयात् परिपृच्छ्यते ॥

The Rāmāyaṇa informs us that Rāma visited the Ashrama of Rishi Śarabhaṅga.[128] Evidently, Rishi Śātātapa and Rishi Śarabhaṅga lived in the pre-Rāmāyaṇa era.

The Āchāryas of Vyākaraṇa Śāstra

The grammar of Vedic Sanskrit was limited to Padapātha (identification of words in mantras) during the early Rigvedic period. Brahma taught the method of Padapātha to Brihaspati. Patañjali of Mahābhāṣya states that Brihaspati taught Padapātha to Indra (*Brihaspatirindrāya divyam varṣa-sahasram pratipadoktānām śabdānām śabdapārāyaṇam provācha…*). Seemingly, Indra introduced the rules of conjunction (Sandhi) and methodology for context-free grammar. The basics of context-free grammar and the rules of Sandhi might have evolved by 12000-11500 BCE. The majority of Rigvedic hymns were written around 11500-10500 BCE and some old hymns of Rigveda (written before 11500 BCE) might have been redacted or recompiled with reference to the grammar of Vedic Sanskrit. This may be the reason why all hymns of Rigveda follow the rules of conjunction and context-free grammar perfectly. Probably, Śiva or Maheśvara (11300-11200 BCE) also introduced some new concepts in grammar.

According to Sh. Yudhisthir Mimansak, there were eighty-five ancient grammarians before the time of Pāṇini.[129] Six Prātiśākhyas of Vedas are the oldest extant texts of Sanskrit grammar. Most probably, these Prātiśākhyās were recompiled around 7000-6000 BCE.

		In CE
1.	Rikprātiśākhya by Śaunaka	7000-6000 BCE
2.	Vājasaneya-Prātiśākhya by Kātyāyana	
3.	Sāma-Prātiśākhya	
4.	Atharva-Prātiśākhya	
5.	Taittirīya-Prātiśākhya	
6.	Maitrāyaṇīya-Prātiśākhya	

The references of four more Prātiśākhyas of Āśvalāyana, Śāṅkhāyana, Bāṣkala and Chārāyaṇīya branches are also found in literature. The following seven ancient treatises of Vyākaraṇa were also the earliest.

		In CE
1.	Riktantra by Śākatāyana or Audavraji	7200-6000 BCE
2.	Laghu Riktantra	
3.	Pratijñāsūtra by Kātyāyana	
4.	Bhāṣikasūtra by Kātyāyana	
5.	Sāmatantra by Audavraji or Gārgya	
6.	Akśaratantra by Āpiśali	
7.	Atharva-Chaturadhyāyī	

The following fifty-eight āchāryas of Vyākaraṇa were referred to in Prātiśākhyas. Brahma II was the first āchārya, who flourished around 14050 BCE; whereas Śaunaka of 6500 BCE was the last āchārya.

1.	Brahma	30.	Plākśāyana
2.	Brihaspati	31.	Plākśi
3.	Indra	32.	Bābhravya
4.	Bhāradwāja	33.	Mākśavya
5.	Agniveśya	34.	Māchākīya
6.	Agniveśyāyana	35.	Māṇḍūkeya
7.	Anyatareya	36.	Mādhyandini
8.	Agastya	37.	Mīmānṁsaka
9.	Ātreya	38.	Yāska
10.	Ukhya	39.	Vādabikara
11.	Uttamottarīya	40.	Vātsapra
12.	Audavraji	41.	Vālmiki
13.	Aupaśavi	42.	Vedamitra
14.	Kāndamāyana	43.	Vyādi I
15.	Kātyāyana	44.	Śākatāyana
16.	Kāṇva	45.	Śākala
17.	Kāśyapa	46.	Śākalya
18.	Kaunḍinya	47.	Śākalyapitā
19.	Kauhaliputra	48.	Śānkhamitri

20. Gārgya
21. Gautama
22. Jātūkarṇya
23. Taittirīyaka
24. Dālbhya
25. Naigi
26. Pāñchāla
27. Pāṇini I (mentioned in Riktantra)
28. Pauṣkarasādi
29. Prāchya Pāñchāla

49. Śāṅkhāyana
50. Śūravīra
51. Śūravīrasuta
52. Śaityāyana
53. Śaunaka
54. Sthavira Kaunḍinya
55. Sthavira Śākalya
56. Sānkritya
57. Hārīta
58. Nakulamukha

Pāṇiniyāṣṭaka mentions sixteen āchāryas:

1. Śiva Maheśvara
2. Brihaspati
3. Indra
4. Vāyu
5. Bhāradwāja
6. Bhāguri (the author of Saṁhitā Brāhmaṇa of Sāmaveda)
7. Pauṣkarasādi
8. Chārāyaṇa
9. Kāśakritsna
10. Śāntanu (the author of Phitsūtras)
11. Vaiyāghrapadya
12. Mādhyandini
13. Rauḍhi
14. Śaunaki
15. Gautama
16 Vyādi I

Pāṇini's Aṣṭādhyāyī mentions ten Vyākaraṇa āchāryas:

1.	Śākalya	सम्बुद्धौ शाकल्यस्येतावनार्षे, 1.1.16, सर्वत्र शाकल्यस्य, 8.4.51, लोपः शाकल्यस्य 8.3.19, इकोऽसवर्णे शाकल्यस्य ह्रस्वश्च 6.1.127
2.	Kāśyapa	तृषिमृषिकृशेः काश्यपस्य, 1.2.25, नोदात्तस्वरितोदय-मगार्ग्यकाश्यपगालवानाम्, 8.4.67
3.	Śākatāyana	त्रिप्रभृतिषु शाकटायनस्य, 8.4.50, व्योर्लघुप्रयत्नतरः शाकटायनस्य, 8.3.18, लङः शाकटायनस्यैव, 3.4.111
4.	Gārgya	ओतो गार्ग्यस्य, 8.3.20, नोदात्तस्वरितोदयमगार्ग्य-काश्यपगालवानाम्, 8.4.67, अड्गार्ग्यगालवयोः, 7.3.99
5.	Gālava	नोदात्तस्वरितोदयमगार्ग्यकाश्यपगालवानाम्, 8.4.67, अड्गार्ग्यगालवयोः, 7.3.99, तृतीयाऽऽदिषु भाषितपुंस्कं पुंवद् गालवस्य, 7.1.74, इको ह्रस्वोऽङ्यो गालवस्य, 6.3. 61
6.	Bhāradwāja	ऋतो भारद्वाजस्य, 7.2.63
7.	Āpiśali	वा सुप्यापिशलेः, 6.1.92
8.	Sphoṭāyana	अवङ् स्फोटायनस्य, 6.1.123
9.	Chākravar-maṇa	ई३ चाक्रवर्मणस्य, 6.1.130
10.	Senaka	गिरेश्च सेनकस्य, 5.4.112

Let us discuss the dates of the celebrated āchāryas of Vyākaraṇa Śāstra.

Śākalya II (7200 BCE): Śākalya belonged to the fifth generation of Indrapramiti, the disciple of Paila (11100 BCE) and founded the Śākala branch of Rigveda. Therefore, we can fix the date of Śākalya I around 10900 BCE. Most probably, Śākalya II compiled a sūtra text on Vyākaraṇa for Vedic and Laukika Sanskrit. The Mahābhārata mentions that Śākalya lived in Krita Yuga which indicates that Śākalya II lived before 6777 BCE.[130] Thus, we can roughly fix the date of Śākalya II around 7200 BCE.

Śākaṭāyana II (6800 BCE): Yāska's Nirukta (6500 BCE), Śaunaka's Rikprātiśākhya and Brihaddevatā (6500 BCE) and Vājasaneya

Prātiśākhya (6400 BCE) refer to Śākaṭāyana. Bhaṭṭa Gopinātha mentions two Śākaṭāyanas in his Saṅskāraratnamālā. One Śākaṭāyana belonged to Vādhryāśva gotra whereas another Śākaṭāyana belonged to Kāṇva gotra. Anantadeva indicates in his commentary on Śukla-Yajuṣ-Prātiśākhya that Śākaṭāyana, the grammarian belonged to the Kāṇva gotra. According to the colophons of manuscripts, Sāmasarvānukramaṇī and Nāgesha Bhaṭṭa's Laghuśabdenduśekhara, Śākaṭāyana II was the author of Riktantra of Sāmaveda whereas Bhaṭṭoji Dīkśita records that Audavraji was the author of Riktantra.

The Colophon of a Manuscript: "इति ऋक्तन्त्रव्याकरणम् शाकटायनादिभिः कृतं ।"

Sāmasarvānukramaṇī: "ऋचां तन्त्रव्याकरणे पञ्चसंख्या प्रपाठकम्। शाकटायनदेवेन द्वात्रिशत् खण्डकः स्मृतः ॥"

Bhattoji Dikśita: "तथा च ऋक्तन्त्रव्याकरणाख्यस्य छान्दोग्यलक्षणस्य प्रणेता औदव्रजिरप्यसूत्रयत् ।"

Śākaṭāyana II also wrote Laghu-Riktantra. Sāmasarvānukramaṇī indicates that Sāmatantra was written by Audavraji. Riktantra refers to Audavraji and Śākaṭāyana I (belonged to Vādhryāśva gotra). Probably, Puṇyayaśa Audavraji (7000 BCE) mentioned in Vaṁśa Brāhmaṇa was the author of Samatantra. Seemingly, Śākaṭāyana II of Kāṇva gotra was the author of Riktantra.

Pānini I (7000 BCE): Laghu Riktantra of Śākaṭāyana II refers to Pāṇini. Evidently, Pāṇini existed before Śākaṭāyana II. Pāṇini II's Aṣṭādhyāyī quotes Śākaṭāyana II. Jinendrabuddhi's Kaśikā Vritti (*Vivaraṇapañchikā Nyāsa*) mentions "*Pūrva-Pāṇinīyāḥ*", "*Apara-Pāṇinīyāḥ*" and "*Pūrva-Pāṇinīyam Śāstram*".[131] A manuscript of twenty-four sūtras written by Pāṇini I was found in Gujarat as mentioned by Sh. Yudhishthira Mimansak. Patañjali refers to Pūrvasūtras many times in his Māhābhāṣya. Pravarādhyāya of Baudhāyana Śrautasūtra (6500 BCE) refers to Pāṇini as the progenitor of a Pravara gotra of Bhrigu lineage.[132]

All Pravara gotras had been originated before the Rāmāyaṇa era or at least before the Mahābhārata era. There is not a single Pravara gotra which originated after the Mahābhārata era. Evidently, there were two Pāṇinis.

Pāṇini I lived before Śākaṭāyana II around 7000 BCE who was the founder of his Pravara gotra. Venkata Mādhava, a commentator on Rigveda, mentions that Śākalya, Pānini and Yāska were the three scholars of the meaning of Rigveda (*Śākalyaḥ Pāṇiniryāska ityrigarthaparāstrayaḥ*). Seemingly, Pānini I flourished before Yāska (6500 BCE). Patañjali's Mahābhāṣya indicates that Kautsa was the pupil of Pāṇini (*Upasedivān Kautsaḥ Pāṇinim*).[133] Rigveda indicates that Kutsa was the son of Arjuna and the grandson of Indra. Kutsa was the founder of Kautsa gotra (tryārṣeya pravara gotra) of Āṅgirasa lineage. Yāska's Nirukta quotes Kautsa. Seemingly, the Kautsa mentioned in Nirukta was the pupil of Pāṇini I. According to tradition, one Kautsa was the disciple of Rishi Varatantu and the contemporary of Ikśvāku King Raghu. Aṣṭādhyāyī refers to Varatantu (*Varatantu-Khadikokācchạṇ*). Pāṇini II, the author of Aṣṭādhāyī lived during the time of Nanda Dynasty (1664-1596 BCE).

Pāṇini II (1670-1590 BCE): According to Puruṣottamadeva of Trikāndaśeṣa, Pāṇina, Pāṇini, Dākśiputra, Śālāturīya, Śālaṅki and Āhika are the names of Pāṇini. *Yaśastilakachampū* mentions Pāṇini as Paṇiputra. Pāṇini's mother was Dākśī. Therefore, he was referred to as Dākśīputra. Pāṇini's native place was Śalātura. A village named Śalātula is still existing close to the city of Attock in Punjab Province of Pakistan. Hiuen Tsang also indicates that Śālātura village existed close to Takśaśilā. Seemingly, Śālaṅki and Āhika were the names of Pāṇini I. None of the āchāryas of post-Pāṇinian period used these names for Pāṇini II. The "Śālaṅki" word is also found in the Pailādi gaṇa of Aṣṭādhyāyī.[134]

According to Kathāsaritsāgara, Varṣa of Pātaliputra was the teacher of Pāṇini II. Seemingly, Vararuchi Kātyāyana, Vyādi and Indradatta were junior contemporaries of Pāṇini II. Kātyāyana refers to Pānini as Bhagavān Pāṇini Āchārya in his Vārtikas.[135]

प्रातिपदिकविज्ञानाच्च भगवतः पाणिनेराचार्यस्य सिद्धम् ।

Āryamañjuśrimūlakalpa mentions that Māṇava Pāṇini was a friend of King Nanda (*Tasyāpyanyatamaḥ sakhyaḥ Pāṇinirnāma Māṇavaḥ*). Kathāsaritsāgara also indicates that Pāṇini II was the contemporary of Nanda Kings Yogananda and Satyananda. Śakaṭāla was the minister of King Satyananda and Yogananda. Brihatkathā

and Kāthasaritsāgara mentions Chandragupta Maurya as the son of Pūrvananda. Varṣa, Upavarṣa, Pāṇini, Piṅgala, Vyādi, Vararuchi and Patañjali became renowned scholars in Pātaliputra as stated in Rājaśekhara's Kāvyamīmāṁsā (*Śruyate cha Pātaliputre Śāstrakāra-parīkśā – atropavarṣa-Varṣāviha Pāṇini-Piṅgalāviha Vyādiḥ, Vararuchi-Patañjali iha Parīkśitāḥ khyātimupajagmuḥ*….). Though Vararuchi Kātyāyana was the pupil of Varṣa, he later became the follower of Pāṇini II.

Most probably, there were two traditions of Vyākaraṇa: Aindra and Māheśvara. Though Pratyāhāras were invented in the tradition of Māheśvara during the later Prātiśākhya period (around 6500 BCE), Pāṇini II had edited and rearranged these Pratyāhāra sūtras scientifically and used them extensively in his treatise "Aṣṭādhyāyī". Aindra Vyākaraṇa did not use Pratyāhāras, which is evident from Kātantra Vyākaraṇa. Pāṇini II had succeeded in presenting entire Sanskrit grammar in 3996 sūtras with minimum words possible. Thus, Pāṇinian grammar gradually became more popular than Aindra Vyākaraṇa. The reference of Pūrvasūtras in Mahābhāṣya, and the manuscript of twenty-four Pāṇinīya sūtras found in Gujarat, indicates that Pāṇini II might have edited and recomposed the sūtras of Pūrva-Pāṇinīya Śāstra and presented them in his magnam opus "Aṣṭādhyāyī". Pāṇini II was also the author of Dhātupātha, Ganapātha, Uṇādipātha and Lingānuśāsana. He also wrote a Kāvya named *Jāmbavatī Vijaya* also known as *Pātāla Vijaya*. Undoubtedly, Pāṇini I (7000 BCE) was the original author of Pāṇinīya-Śikśā in verses. Tolkāppiyam, an ancient text of Tamil Vyākaraṇa, contains the translation of some sūtras of Pāṇinīya Śikśā. One Sūtra of Pāṇinīya Śikśā (ङञणनमाः स्वस्थाननासिकास्थानाः – 1.21) clearly indicates that Pāṇini I had no knowledge of Pratyāhāras.

Dākśāyaṇa Vyādi I (7000 BCE) & Vyādi II (1670-1590 BCE)

There were two Vyādis, too. The word "Vyādi" is found in the Kraudyādi gaṇa of Aṣṭādhyāyī.[136] Seemingly, Vyādi I was also referred to as Dākśāyaṇa. He was the author of Saṅgraha Sūtras, which was lost by the time of Bhartrihari I (10th century BCE). Mahabhāṣya mentions Āpiśalas, Pāṇinīyas, Vyādīyas and Gautamīyas (*Āpiśala-Pāṇinīya-Vyādīya-Gautamīyāḥ*) and refers to Saṅgraha, the great treatise of Dākśāyaṇa (*Śobhanā khalu astu Dākśāyaṇena Saṅgrahasya kritiḥ*).[137] According to

Nāgesha Bhatta, Saṅgraha contained 100000 ślokas and Bhartrihari states that Saṅgraha discussed 14000 subjects. Śaunaka's Rikprātiśākhya also refers to Vyādi I. Kāśikā states that Duṣkaraṇa was the work of Vyādi (*Vyādyupajñam Duṣkaraṇam*). Nyāsa, a commentary on Kāśikā, reads it as *Vyādyupajñam Daśahuṣkaraṇam*. Haradatta's Padamañjarī indiates that the Duṣkaraṇa may be the text of Vyākaraṇa or Kāmaśāstra. Nyāsa was written before the time of Sanskrit poet Māgha (20 BCE - 60 CE). It appears that Duṣkaraṇa was the work of Vyādi I because the text was already lost before the 1st century BCE.

Vyādi II was a contemporary of Pāṇini II. He was a close friend of King Yogananda of the Nanda Dynasty.

Āpiśali (7100 BCE) and Rauḍhi (6950 BCE): Kāśikā Vritti indicates that Āpiśali lived before Pāṇini I (*Āpiśala-Pāṇinīyāḥ*, *Pāṇinīya-Rauḍhīyāḥ* and *Rauḍhīya-Kāśakritsnāḥ*).[138] According to Baudhāyana Śrautasūtra, Āpiśala was the founder of a Pravara gotra of Bhrigu lineage. Rauḍhi lived after Pāṇini I and Kāśakritsna II lived after Rauḍhi.

Kāśakritsna II (6900 BCE): Baudhāyana Śrautasūtra (6500 BCE) mentions that Kāśakritsna was the founder of a Pravara gotra of Bhrigu lineage. Kātyāyana Śrautasūtra (6500 BCE) also quotes Kāśakritsna. Bādarāyaṇa's Vedāntasūtras also refer to Kāśakritsna. Sanskrit poet Bhāsa refers to a Mīmāṁsāśāstra written by Kāśakritsna. Bhaṭṭa Parāśara indicates in his Tattvaratnākara that Kāśakritsna was the pupil of Bādarāyaṇa and he wrote Saṅkarṣa-kānda of Mīmāṅsā. There were many Bādarāyaṇas and the earliest Bādarāyaṇa lived around 10850 BCE. Kāśikā mentions two Kāśakritsnas: Pūrva-Kāśakritsnas and Apara-Kāśakritsnas.[139] Kāśakritsna's Śabdakalāpa Dhātupātha has 450 more roots in comparison with the Dhātupātha of Pāṇini II.

Chārāyaṇa (6450 BCE): Chārāyaṇa was the author of Chārāyaṇīya Prātiśākhya and probably a junior contemporary of Śaunaka (6500 BCE).

Vaiyāghrapadya (6600 BCE): Śatapatha Brāhmaṇa, Jaiminīya Brāhmaṇa and Śāṅkhāyana Āraṇyaka mentions Vaiyāghrapadya. Anuśāsana Parva of the Mahābhārata records that Vyāghrapād was the son of Rishi

Vasiṣṭha.[140] Kāśikā indicates that Vaiyāghrapadiya treatise of Vyākaraṇa had ten chapters (*Daśakam Vaiyāghrapadīyam*).[141] Pāṇini II placed the word "Vyāghrapād" in Gargādi gaṇa.[142] Seemingly, a descendant of Vaiyāghrapadya gotra of Vasiṣṭha lineage wrote a treatise on Vyākaraṇa around 6600 BCE.

Śaunaka (6500 BCE): Śaunaka was the author of Rikprātiśākhya and a contemporary of Yāska.

Śāntanu (7500-7000 BCE): Śāntanu was the author of Phit-sūtras related to the use of Svaras in Laukika Sanskrit. He used एश् pratyāhāra instead of pratyāhāra. According to Āchārya Chandragomi,एश् is older than एच्. Ṣaḍguruśiṣya refers to Śāntanavīya tradition that existed during the time of Patañjali, the author of Nidānasūtra of Sāmaveda. Therefore, Śāntanu must be dated before Patañjali.

Piṅgalanāga's Cḥandovichiti (7500 BCE) and Piṅgalāchārya (1695-1620 BCE)

Halāyudha states that Pingalanāga was the author of Cḥandasūtras (श्रीमत्पिङ्गलनागोक्त छन्दशास्त्रमहोदधौ). According to a tradition, Piṅgalanāga was another name of Patañjali. Hriṣīkeśa, the commentator of Cḥandovichiti indicates that Piṅgalanāga lived before Patañjali (7000 BCE), the author of Nidāna-sūtra.

> "पिङ्गलनागाद्यैः छन्दोविचितयः कृताः। तासां पिङ्गलनागीया सर्वसाधारणी भवेत्। सर्वानुक्रमणी काचिच्छन्दोऽनुक्रमणी परा। शौनकीया तृतीयेमास्तिस्र ऋग्वेदिनां मताः। यजुर्वेदविदामन्या सर्वानुक्रमणी भवेत्। सामगानां निदानस्था पतञ्जलिकृता हि सा। अथ भगवान् छन्दोविचितिकारः पतञ्जलिः ....."

Baudhāyana Śrautasūtra refers to Paiṅgalāyana pravara gotra of Bhrigu lineage. Piṅgalanāga's descendants came to be known as Paiṅgalāyanas. In all probability, Piṅgalanāga lived around 7500 BCE and he was the original author of "Cḥandovichiti". Piṅgala word is found in the gaṇapātha of Aṣṭādhyāyī.[143] Evidently, a great Rishi Piṅgala existed before Pāṇini II.

Piṅgala II was the younger brother of Pāṇini II as mentioned by Ṣaḍguruśiṣya (*tathā cha sūtryate Bhagavatā Piṅgalena Pāṇinyānujena…*). Mahābhāṣya says that Pāṇini's brother Piṅgala also wrote a treatise on Pāṇinīya Śikśā (*Jyeṣṭhabhrātribhirvihite vyākaraṇe anujastatra Bhagavān Piṅgalāchāryastanmatamanubhāvya Śikśām vaktum pratijānīte…*). Seemingly, Piṅgala II (1665-1580 BCE) edited and recompiled the Cḥandasūtras of Rishi Piṅgalanāga tradition in eight chapters.

Six Upāngas or Darśana Śāstras

Indian philosophical tradition formally begins from the later Rigvedic period. Initially, Brahmavidyā and Vākovākya (Nyāya) were the two branches of ancient Indian philosophies, during the period of Brāhmaṇas and Upaniṣads (10000-8000 BCE). Gradually, Sāṅkhya, Yoga and Mīmāṅsā schools evolved from Brahmavidyā whereas Nyāya, Vaiśeṣika and Lokāyata schools evolved from Vākovākya. Mīmāṅsā divided into two schools: Pūrva Mīmāṅsā and Uttara Mīmāṅsā (Vedānta). Yājñavalkya Smriti also mentions only two schools of philosophy, Nyāya and Mīmāṅsā.

Sāṅkhya Sūtras (7000-6500 BCE)

Sāṅkhya is one of the earliest schools of Indian philosophy which has its roots in Vedas and ancient Upaniṣads. Mahābhārata's Śāntiparva (275th chapter) indicates that Rishi Asita-Devala (11200 BCE) was the founder of Sāṅkhya philosophy.[144] The extant Sāṅkhya sūtras were written by Kapila Muni (11000 BCE) who was the contemporary of King Rāhūgaṇa, the father of Rishi Gautama Rāhūgaṇa (10950 BCE) and Ikśvāku King Sagara (11000 BCE). He was the author of the earliest version of Sāṅkhya sūtras. Seemingly, the disciples of Sāṅkhya philosophical tradition had recompiled Sāṅkhya sūtras around 7000-6500 BCE. Mahābhārata's Śāntiparva mentions that Pañchaśikha was the son of Kapila and the disciple of Āsuri. Thus, the Sāṅkhya philosophers, Kapila, Āsuri and Pañchaśikha, lived around 11000-10900 BCE. Bhagavad Gītā also mentions Kapila Muni (*Siddhānām Kapilo Muniḥ*).[145] Āchārya Pañchśikha wrote "Ṣaṣṭi-Tantra" on Sāṅkhya Philosophy. A Chinese

translation of Sāṅkhya mentions that Kapila was named so because his skin colour resembled a golden yellow.

Iśvarakrishna (2000-1900 BCE) wrote Sāṅkhyakārikā after the Mahābhārata era. One Māṭhara Brāhmaṇa wrote a commentary on Sāṅkhyakārikā known as "Mātharavritti". The Gilgit Manuscript of Vinayavastu mentions that Māṭhara was the contemporary of King Bimbisāra. Thus, Māṭhara lived during the lifetime of Bimbisāra and Buddha (1944-1864 BCE). Māṭhara refers to Iśvarakrishna as "Bhagavān". Probably, Iśvarakrishna was the teacher of Māṭhara. Therefore, we can fix the date of Iśvarakrishna around 2000-1900 BCE. Āchārya Vindhyāvāsin also wrote a commentary on Sāṅkhyakārikā and he was the senior contemporary of Vasubandhu (950-870 BCE).

Gauḍapāda (640-550 BCE), the paramaguru of Ādi Śaṅkara, also wrote a commentary on Sānkhyakārikā. Yuktidīpikā or Rājavārttika, a commentary on Sāṅkhyakārikā was written around 200 BCE. Vachaspati Miśra (150-225 CE) wrote Sāṅkhyatattvakaumudī.

Yoga Sūtras (7000 BCE)

Mahābhārata's Śānti Parva and Brihadyogi Yājñavalkya Smriti inform us that Rishi Hiraṇyagarbha was the founder of Yoga philosophy (सांख्यस्य वक्ता कपिलः परमर्षिः स उच्यते, हिरण्यगर्भ योगस्य वेत्ता नान्यः पुरातनः).[146] Rishi Hiraṇyagarbha (11200 BCE) was the son of Prajāpati and the author of the 121st Sūkta of the tenth Mandala of Rigveda. Kena, Katha and Śvetāśvatara Upaniṣads are said to be Yoga treatises. According to Maitri Upaniṣad, Prāṇāyāma, Pratyāhāra, Dhyāna, Dhāraṇā, Tarka and Samādhi are the six aṅgas of Yoga [तथा तत् प्रयोगकल्पः प्राणायामः प्रत्याहारो ध्यानं धारणा तर्कः समाधिः षडङ्गा इत्युच्यते योगः].

Evidently, Ṣadaṅga Yoga existed during the period of Upaniṣads. Patañjali I wrote Yogasūtras and propounded Aṣṭāṅga Yoga. Ṣaḍguruśiṣya clearly mentions that Patañjali I (7000 BCE) wrote Nidānasūtra and Yogasūtra.

> यत्प्रणीतानि वाक्यानि भगवांस्तु पतञ्जलिः ।
> व्याख्यच्छान्तनवीयेन महाभाष्येन हर्षितः ।
> योगाचार्यः स्वयं कर्ता योगशास्त्रनिदानयोः ॥

In all probability, Patañjali I (7000 BCE) wrote one Prātiśākhya treatise, Yogasūtras and also recompiled Charaka Saṁhitā. [योगेन चित्तस्य पदेन वाचां, मलं शरीरस्य च वैद्यकेन । योऽपाकरोत्तं प्रवरं मुनीनां, पतञ्जलिं प्राञ्जलिरानतोऽस्मि ॥]. Vyāsa of the Mahābhārata era (3162 BCE) wrote a commentary on Yogasūtras of Patañjali. Vyāsa-Bhāṣya on Yogasūtras refers to Āchārya Vārṣagaṇya. Bharata's Nāṭyaśāstra and Mahābhārata's Śānti Parva also mention Vārṣagaṇya. Evidently, Vārṣagaṇya was an ancient āchārya of the pre-Rāmāyaṇa era. Vindhyāvāsa's teacher Vriṣagaṇa cannot be identified as Vārṣagaṇya because he lived only in the 10th century BCE.

Vasiṣṭha, the Founder of Brahmavidyā and Yoga

Vasiṣṭha Saṁhitā (Yoga Kānda) also relates the philosophy of Aṣṭāṅga Yoga. Vasiṣṭha's Aṣṭāṅga Yoga is a little different from that of Patañjali. Most probably, Aṣṭāṅgas of Yoga evolved before the lifetime of Patañjali. The available Vasiṣṭha Saṁhitā might have been written around Rāmāyaṇa era. Śāṇḍilya Saṁhitā and Sūta Saṁhitā claim that Śāṇḍilya and Sūta were the pupils of Vyāsa, the great grandson of Vasiṣṭha. Śāṇḍilya Saṁhitā indicates that Brahmarāta and Madhu were also the pupils of Vyāsa. Yājñavalkya was the son of Brahmarāta. Thus, the treatise of Yogayājñavalkya also related to the tradition of Vasiṣṭha. The Mahābhārata's Śāntiparva mentions that Vasiṣṭha (11200 BCE) learnt Yoga from Rishi Hiraṇyagarbha. Ādi Śaṅkara also mentions Vasiṣṭha as the founder of the Vedanta philosophy.

Mīmāṅsā: Pūrva Mīmāṅsā and Uttara Mīmāṅsā (7500-6000 BCE)

Traditionally, it is believed that Bādarāyaṇa Vyāsa was the author of Uttara Mīmāṅsā Sūtras or Brahma Sūtras, whereas Jaimini was the author of Pūrva Mīmāṅsā Sūtras. There were many Bādarāyaṇas and Jaiminis. The earliest Bādarāyaṇa (10900 BCE), the pupil of Pārāśaryāyaṇa is mentioned in Sāmavidhāna Brāhmaṇa. The earliest Jaimini (11100 BCE) was the pupil of Veda Vyāsa. Bādarāyaṇa is a Pravara gotra of Āṅgirasa. Therefore, Bādarāyaṇa Vyāsa of Āṅgirasa gotra cannot be identified with Krishna Dvaipāyana Vyāsa of Vasiṣṭha gotra. Evidently, Jaimini I (11100 BCE)

authored the earliest version of Pūrva Mīmāṅsā and Bādarāyaṇa (10900 BCE) wrote the earliest version of Uttara Mīmāṅsā or Brahmasūtras.

Mīmāṅsā Sūtras and Brahma Sūtras quote many āchāryas like Kārṣṇājini, Kāśakritsna, Ātreya, Audulomi, Aśmarathya, Bādari, Jaimini and Baudhāyana. Evidently, these sūtras had been recompiled during the post-Vedic period. Bhaṭṭa Parāśara mentions that Kāśakritsna was the pupil of Bādarāyaṇa and wrote Sankarṣa-kānda of Mīmāṅsā. In all probability, the disciples of the Mīmāṅsā tradition of Jaimini and Bādarāyaṇa had recompiled Mīmāṅsā Sūtras and Brahma Sūtras around 7500-6000 BCE because Mīmāṅsā Sūtras quoted Jaimini, Bādarāyaṇa, Kāśakritsna and Baudhāyana. Kāśakritsna and Baudhāyana certainly flourished after the lifetime of Jaimini and Badarāyaṇa. Upavarṣa (1700-1620 BCE) wrote commentaries on both Mīmāṅsās. Bhāskara refers to Upavarṣa as Śāstra Sampradāya Pravarttaka. Seemingly, Upavarsha formally founded Pūrva Mīmāṅsā and Uttara Mīmāṅsā as two separate schools of philosophies.

Nyāya Sūtras (4500-4000 BCE)

Nyāya was also referred to as Vākovākya, Tarka, Hetuvidyā and Ānvīkśikī in ancient times. Rishi Gautama (11200 BCE), the father of Rishi Śardvān was probably the founder of Nyāya philosophy. Another Rishi Gautama, son of Rāhūgaṇa was the contemporary of King Janaka of Videha Kingdom. Though Vākovākya (Nyāya) was an important subject of the era of Brāhmaṇas and Upaniṣads but Akśapāda Gautama, a descendant of Gautama gotra composed Nyāya sūtras around 4500-4000 BCE. The Mahābhārata refer to Ānvīkśikī and Tarkavidyā.[147] Pāṇini (1670-1590 BCE) mentions Nyāya (*Adhyāya-nyāyodyāva-samhārāścha*).[148] Evidently, Nyāya sūtras existed before the birth of Buddhism.

Vaiśeṣika Sūtras (~4500-4000 BCE)

Kaṇāda, the founder of Vaiśeṣika philosophy, was the descendant of Kaśyapa gotra. Vaiśeṣika Darśana was also known as Aulūkya Tantra. Seemingly, Rishi Ulūka (11150 BCE) of Viśvāmitra gotra taught it to Kaṇāda. The Mahābhārata indicates that Ulūka was the son of Rishi Viśvāmitra.[149] The descendants of Rishi Ulūka were also known as Ulūkas.

Vāyu Purāṇa indicates that Soma Sharma's sons Akśapāda, Kaṇāda and Ulūka lived in the twenty-eighth Dvāpara Yuga, i.e., after the Rāmāyaṇa era.[150] Thus, we can roughly fix the date of Vaiśeṣika sūtras around 4500-4000 BCE.

Śilpa or Sthāpatya Śāstras

According to the Mahābhārata's Śānti Parva, Śiva was the founder of Śilpa Śāstra (शिल्पिकः शिल्पिनां श्रेष्ठः सर्वशिल्पप्रवर्तकः).[151] Viśvakarmā Vāstuśāstra, Kaśyapa Śilpaśāstra, Nārada Śilpaśāstra and Mayamata were the ancient texts of Śilpaśāstra. Viśvakarmā Vāstuśāstra refers to Krittikādi twenty-eight Nakśatras.[152] Abhijit was excluded from the list of Nakśatras around 9000-8000 BCE. Evidently, the earliest version of Viśvakarmā Vāstuśāstra was written around 9200-8200 BCE.

Kāmaśāstras

Kāmaśāstra was also part of education in ancient India. It is difficult to say when it became a formal subject of education but the subject of Kāmaśāstra was well established before the Rāmāyaṇa era. According to tradition, Nandi (11250-11200 BCE), a contemporary of Śiva, wrote the earliest text on Kāmaśāstra. Śvetaketu, son of Uddālaka Āruṇi, had abridged the Kāmaśāstra written by Nandi. The Mahābhārata's Śānti Parva relates that Śvetaketu (10890 BCE) married Suvarchalā, a daughter of Rishi Devala. There were two Suvarchalas. Suvarchalā I was the wife of Sūrya, as indicated in the Rāmāyaṇa[153] and Suvarchalā II was the wife of Śvetaketu. Later, Gālava Bābhravya also abridged the text of Nandi's Kāmaśāstra. Thus, Kāmaśāstra also originated in later Rigvedic period.

Many āchāryas, like Chārāyaṇa, Suvarṇanābha, Ghoṭakamukha, Gonardīya, Goṇikaputra, Dattaka and Kuchumāra, wrote treatises on Kāmaśāstra. The famous Vātsyāyana Kamasūtra was originally written by Mallanāga Vātsyāyana. Later, Vātsyāyana II of the 11th century BCE wrote Kāmasūtra based on Mallanāga's treatise as indicated by Yaśodhara, the author of Jayamaṅgalā commentary on Vātsyāyayana's Kāmasūtra. Most probably, Mallanāga Vātsyāyana flourished before the Rāmāyaṇa era. Vātsyāyana Kāmasūtra gives an abridged version of the treatises of

Chārāyaṇa, Suvarṇanābha, Ghoṭakamukha, Gonardīya, Goṇikaputra, Dattaka and Kuchumāra.

Buddhist text Atthakavagga of Suttapitaka has the reference of Kāmasūtras. Subandhu (1610-1530 BCE), a contemporary of Maurya King Bindusāra, refers to Vātsyāyana's Kāmasūtra (Mallanāga's treatise) in his work. Milinda Panho (14th century BCE) mentions that Yavana King Milinda learnt nineteen sciences, including the treatise of Goṇika on Kāmaśāstra. Kalhaṇa tells us that Kashmir King Vasunanda of the 11th century BCE wrote a treatise on Kāmaśāstra. King Mādhavavarma (448-416 BCE) of the Gaṅga Dynasty wrote a commentary on Dattaka Kāmasūtras as recorded in the copper plate inscriptions. Kokkoka wrote *Ratirahasya* probably to please a king named Veṇudatta. He refers to the treatise of Nandikeśvara. Kokkoka probably lived around the 1st or the 2nd century CE. Kalyāṇamalla wrote "*Anaṅgarāghava*" in the 9th century CE.

Interestingly, Indians have celebrated Kāmadeva festival since ancient times. Jaimini's Pūrva Mīmāṅsā Sūtras and Kāthaka Grihyasūtras mention Kāmadeva festivals. Some copper plates indicate that the Kadamba kings made grants to Kāmadevāyatana.

The Date of Mayasura's Sūrya Siddhānta (6778 BCE)

After the great flood (11200 BCE), the descendants of Pulastya Rishi (known as Rakśasas or Asuras) living in the Saurashtra region probably migrated to South India and Sri Lanka. These Asuras were the ancestors of Rāvaṇa of the Rāmāyaṇa era. Mayāsura wrote Sūrya Siddhānta at the end of Krita Yuga in 6778 BCE. There was a conjunction of Sun, Moon and all planets in Meṣa Rāśi (Aries) during the lifetime of Mayāsura. This conjunction took place on 22nd Feb 6778 BCE, Sunday. Evidently, Maya considered this rare astronomical event as an epoch and authored his Sūrya Siddhānta in 6778 BCE.

Sh. Anil Narayanan has used computer simulation of Nakśatra latitudinal data by varying ecliptic-obliquity, ecliptic-node-location and ecliptic-sink together with proper motion, and concluded that Sūrya Siddhānta obtained latitudinal data in the timeframe of 7300-7800 BCE.[154] Seemingly, Indian astronomers of the period 7500-7300 BCE acquired the

fresh latitudinal data and updated the Paitāmaha and Vasiṣṭha Siddhāntas. Maya, the great Asura obtained the same latitudinal data and invented the concept of epicycle that revolutionized Indian astronomy. Maya was the first to introduce the epicycle method in astronomical calculations.

Mayāsura was the founder of the sixty-year cycle consisting of five twelve-year cycles of Jupiter. All cycles of sixty years or twelve years in the world follow the epoch of Tretā Yuga, i.e., 6777-6776 BCE. Abul Fazal mentions that an ancient Turkish era calendar, also known as Aighuri, was based on a twelve-year cycle. Although the commencement of this era is not known, yet the year of the cycle can be easily found if we add seven years to the imperfect years of the Maliki era and divide it by twelve. Abu Rayhan says that the Turks add nine to the incomplete Syro-Macedonean years and divide it by twelve. According to Jesuit records, the first sixty-year cycle began in February 3058 BC. Ancient China and Tibet also used the cycle of sixty years. The first year of current Chinese cycle was 1984 CE; whereas the first year of current Tibetan cycle was 1987 CE.

Seemingly, Ancient Brahma Siddhānta introduced the cycle of twelve years and sixty years in 6773 BCE. The tradition of Simhastha Kumbha (Jupiter in Leo) of Ujjain and Nasik is the oldest because the first twelve-year cycle commenced when Jupiter entered Kanyā Rāśi (Virgo) and ended when Jupiter was in Simha Rāśi (Leo). Thus, 6773 BCE was the Prabhava Saṁvatsara in Brahma Siddhānta, whereas 6778 BCE was the Prabhava Saṁvatsara in Mayāsura's Sūrya Siddhānta. Āryabhaṭa refers to the epoch of 6773 BCE and says that sixty cycles of sixty years elapsed in 3173 BCE. Though Lāṭadeva, a disciple of Āryabhaṭa introduced the concept of expunging of one year in every cycle in his version of Sūrya Siddhānta written in 3101 BCE, common people generally followed the tradition of Brahma Siddhānta. This is the reason why 1987 CE was the Prabhava Saṁvatsara in the current sixty-year cycle in India. Evidently, Tibetans also followed the cycle of Brahma Siddhānta.

Seemingly, the Turkish and Chinese traditions followed the epoch of 6777-6776 BCE. If we add nine years to the epoch of Syro-Macedonian era (972 BCE), the first year of the twelve-year cycle was 981 BCE, as

indicated by Abu Rayhan. If we add seven years to the epoch of the Maliki era (417 CE), the first year of the sixty-year cycle was 424 CE. The first year of the current Chinese cycle was 1984 CE. Evidently, the Turkish twelve-year cycle, the sixty-year cycle of the Maliki era, and the ancient Chinese cycle of sixty-years are based on the epoch of 6777-6776 BCE. Therefore, Māyasura was the founder of the cycle of twelve years and the cycle of sixty years.

5

Tretā Yuga (6777-5577 BCE) and The Age of Rāmāyaṇa (5677-5577 BCE)

Maharshi Vālmiki was the author of the Rāmāyaṇa and a contemporary of Sri Rāma. There were at least two Vālmikis. Vālmiki I belonged to the Bhrigu gotra. Śatapatha Brāhmaṇa, Matsya, Vishnu and Bhāgavata Purāṇas relate that Varuṇa married Charṣaṇi and Hilā, who bore two sons, namely, Bhrigu and Vālmiki. Taittiriya Prātiśākhya (6500 BCE) and Maitrāyaṇīya Prātiśākhya (6500 BCE) quote a grammarian named Vālmiki. The Mahābhārata's Droṇa Parva refers to a Vālmiki of Bhrigu gotra. Udyoga Parva also refers to Vālmiki, a descendant of Garuda, son of Kaśyapa's wife Vinatā and a devotee of Vishnu. Thus, there were two lineages of Vālmiki: Bhrigu and Kaśyapa. Skanda Purāṇa and Adhyātma Rāmāyaṇa relate that Vālmiki was born to Brahmana parents and was brought up by Kirātas. He was a robber by profession in his youth but became a rishi later. Seemingly, Vālmiki II, the author of the Rāmāyaṇa originally belonged to the Kaśyapa gotra but was brought up by Kirātas.

The Astronomical Dating of Rāmāyaṇa

Sh. Pushkar Bhatnagar, Sh. PV Vartak and Sh. Nilesh Oak had attempted to calculate the birth date of Rāma based on internal astronomical evidence. The proposed dates of the birth date of Rāma are as under:

1. Sh. Pushkar Bhatnagar – 10th Jan 5114 BCE
2. Sh. PV Vartak – 4th Dec 7323 BCE
3. Sh. Nilesh Oak – 29th Nov 12240 BCE

First of all, we need to understand the linguistic evidence of the evolution of Sanskrit before analysing the internal astronomical evidence. Pāṇini clearly indicates three distinct stages of the evolution of Sanskrit grammar: Cḥandas (Vedic Sanskrit), Sanskrit of transition period and Bhāṣā (Laukika Sanskrit). The Sanskrit of Cḥandas was the Vedic language of Rigveda, Yajurveda, Sāmaveda and Atharvaveda. During the period of Cḥandas Sanskrit, grammar was limited to the rules of Sandhi and context-free grammar only. The language of some sūktas of Atharvaveda belonged to the transition period of the Cḥandas Sanskrit and Laukika Sanskrit. All Brāhmaṇas, Āraṇyakas and Upaniṣads have been written in the transition period around 10000-7500 BCE. During the period from 10000 BCE to 8000 BCE, Sanskrit grammar evolved to an advanced stage. Consequently, Bhāṣā or Laukika Sanskrit came into existence around 7500-7000 BCE. Thus, all texts written in the Sūtra style or Laukika Anuṣṭup meter must be dated after 7500 BCE. We will discuss the evolution of Indic languages at length in Chapter 10.

Vālmiki wrote Ādikāvya, i.e., the Rāmāyaṇa in Laukika Anuṣṭup meter and Bhāṣā Sanskrit. He also used thirteen different meters (including Laukika Anuṣṭup) for writing ślokas. The meters of Jagatī, Triṣṭup, Vipula and so on used in the Rāmāyaṇa are relatively well developed in comparison to the same meters of the Vedic and post-Vedic period. Therefore, the Rāmāyaṇa must be dated after the post-Vedic period. Moreover, none of the treatises written in the Vedic or post-Vedic Sanskrit refers to the Rāmāyaṇa. Thus, the absolute linguistic evidence clearly indicates that the date of the Rāmāyaṇa cannot be established before 7000 BCE. Let us now discuss the traditional and internal astronomical evidence.

The Traditional Date of the Rāmāyaṇa (5677-5577 BCE)

It is traditionally recorded that Rāma was born in the Tretā Yuga. The Mahābhārata mentions that the Rāmāyaṇa occurred at the end of Tretā Yuga. As stated in Ādi Parva, Sri Rāma flourished during the last centuries of Tretā Yuga (त्रेताद्वापरयोः संधौ रामः शस्त्रभृतां वरः, असकृत् पार्थिवं क्षत्रं जघानामर्षचोदितः ||). The epoch of Tretā Yuga commenced around 6777 BCE, considering the epoch of Kritayugānta in 6778-6777 BCE as indicated in Lāṭadeva's Sūrya Siddhānta. The sixty-year cycle

and the Yuga of 1200 years were introduced in 6777 BCE. Thus, we can roughly fix the period of Tretā Yuga around 6777-5577 BCE and the date of the Rāmāyaṇa around 5677-5577 BCE, i.e., in the last century of Tretā Yuga. Seemingly, the concept of differential duration of Yugas had been introduced in the Dvāpara Yuga. The Mahabharata, the epic written in the beginning of Kaliyuga, refers to 2400 years of Dvāpara Yuga. Therefore, we have to consider the Dvāpara Yuga of 2400 years and fix its period around 5577-3177 BCE. Thus, traditional evidence indicates the date of the Rāmāyaṇa to be around 5677-5577 BCE – at the end of Tretā Yuga.

Purāṇas speculate Vālmiki to be the 24th Vyāsa who lived in the 24th Dvāpara Yuga, and mention that Sri Rāma flourished at the end of the 24th Tretā Yuga. Historically, there were many Vyāsas but the imaginary concept of twenty-eight Vyāsas was introduced only in the Gupta period. It is illogical to believe that Parāśara, the father of Vyāsa, lived in the 26th Dvāpara Yuga; Jātūkarṇya, the teacher of Vyāsa, lived in the 27th Dvāpara Yuga; and Vyāsa himself lived in the 28th Dvāpara Yuga. Ironically, Purānas did not explain how Vālmiki, a contemporary of Sri Rāma of the 24th Tretā Yuga lived in the 24th Dvāpara Yuga. Thus, there is no traditional or literary evidence to support the date of Vālmiki in the 24th Dvāpara Yuga. Therefore, we can ignore the speculative concept of twenty-eight Vyāsas.

The Birth Date of Rāma and the Exaltation of Planets

Vālmiki Rāmāyaṇa gives the details of the birth dates of Rāma, Bharata, Lakśmaṇa and Śatrughna.[1] Rāma was born on the ninth tithi of the twelfth month, i.e., Chaitra month, Punarvasu Nakśatra, Karkaṭa lagna. All five planets were exalted on the birth date of Rāma. Bharata was born in Puṣya Nakśatra and Mīna lagna. Lakśmaṇa and Śatrughna were born in Aśleṣa Nakśatra and Kulīra (Karkaṭa) lagna.

ततो यज्ञे समाप्ते तु ऋतूनाम् षट् समत्ययुः।
ततः च द्वादशे मासे चैत्रे नावमिके तिथौ॥
नक्षत्रे अदिति दैवत्ये स्वोच्चसंस्थेषु पंचसु।
ग्रहेषु कर्कटे लग्ने वाक्पता इंदुना सह॥
प्रोद्यमाने जगन्नाथम् सर्व लोक नमस्कृतम्।
कौसल्या अजनयत् रामम् सर्व लक्षण संयुतम्॥
विष्णोः अर्धम् महाभागम् पुत्रम् ऐक्ष्वाकु नंदनम्।

लोहिताक्षम् महाबाहुम् रक्तोष्ठम् दुंदुभिस्वनम् ॥
भरतो नाम कैकेय्याम् जज्ञे सत्य पराक्रमः ।
साक्षात् विष्णोः चतुर्थ भागः सर्वैः समुदितो गुणैः ॥
अथ लक्ष्मण शत्रुघ्नौ सुमित्रा अजनयत् सुतौ ।
वीरौ सर्वास्त्रकुशलौ विष्णोः अर्ध समन्वितौ ॥
पुष्ये जातः तु भरतो मीन लग्ने प्रसन्नधीः ।
सार्पे जातौ तु सौमित्री कुळीरे अभ्युदिते रवौ ॥

It would be pertinent to establish the chronological history of Indian astrology before discussing the exaltation of planets. The available text of Vedāṅga Jyotiṣa was written in Laukika Anuṣṭup meter by Śuchi. Though Vedāṅga Jyotiṣa refers to Lagna and Rāśi, it is mostly devoted to *Muhūrta Nirṇaya* for fixing the precise timings of Vedic rituals. Evidently, early Vedic astrology was limited to *Muhūrta Nirṇaya*. Though the planets were known to the Vedic rishis at least since later Rigvedic era, they were not part of Vedic astrology. The Arundhati-Vasiṣṭha observation (~10000 BCE) and the Rohiṇī Śakaṭa Bheda observation (9800-9300 BCE) as bad omens clearly indicate the beginning of Indian astrology around 9000 BCE.

Maya's Sūrya Siddhānta (6778 BCE) was the beginning of the evolution of Siddhantic Indian astronomy. A branch of Paitāmaha Siddhānta had also introduced the sixty-year cycle based on the Jovian cycle of twelve years and the Chaitrādi calendar, and followed the same epoch of 6778-6777 BCE when Jupiter was in Aśvinī Nakśatra. This new branch of Paitāmaha Siddhānta came to be known as Brahma Siddhānta later. The traditional Paitāmaha Siddhānta had introduced the Saptarṣi cycle of 2700 years in 6777 BCE, assuming the hypothetical position of Saptarṣis in Aśvinī Nakśatra around 6777-6677 BCE, and continued the use of traditional five-year Yuga cycle, the Māgha Śuklādi calendar and the scheme of Pauṣa-Āṣāḍha intercalation. Nārada Siddhānta followed the Chaitrādi calendar whereas Bhāradwāja Siddhānta followed Māgha Śuklādi calendar as indicated in Sumatītantra and Adhimāsa Prakaraṇa of Dharmanirṇaya-tithi-sārasaṅgraha.[2] Instead of the periodic intercalation (after every two and a half years) as explained in Vedāṅga Jyotiṣa, the Paitāmaha, Nārada and Bhāradwāja Siddhāntas of Tretā Yuga had introduced a new scheme of intercalation in which any months without

a saṅkrānti in Uttarāyaṇa period would give the Pauṣa intercalation, and in Dakśiṇāyana the Āṣāḍha intercalation. Interestingly, the Licchavi inscriptions of the 1st millennium BCE followed the intercalation scheme of Paitāmaha and Nārada Siddhāntas as explained by Sh. Shankaraman Rajavamsi.[3] Seemingly, the Vasiṣṭha Siddhānta was introduced around 5977 BCE – 800 years after 6777 BCE. According to tradition, the Vasiṣṭha Siddhānta commenced around 1299101 BCE, 432000 years before the beginning of Dvāpara Yuga. It indicates that the epoch of Vasiṣṭha Siddhānta commenced when two-thirds of the Tretā Yuga of 1200 years (6777-5577 BCE) had elapsed. Thus, the Vasiṣṭha Siddhānta was introduced around 5977 BCE. The Romaka Siddhānta was also introduced in Tretā Yuga, after 6777 BCE. The Pauliṣa Siddhānta might have been established during the Dvāpara Yuga (5577-3177 BCE), around 4300-4000 BCE. Thus, we can conclusively fix the date of the beginning of Indian Siddhantic astronomy around 6778 BCE.

Evidently, the Siddhantic astronomy and the planetary astrology had been evolved after 6778 BCE. John Playfair had demonstrated that the earliest date of astronomical observations, as recorded in the ephemeris currently used by Indian astrologers, was 4300 BCE. Thus, we have no information of the ephemeris used before 4300 BCE. Therefore, it may be incorrect to calculate the exaltation of planets of the Rāmāyaṇa era based on the modern ephemeris of Indian astrology. It is also quite possible that the verses referring to the exaltation of planets and incarnation of Vishnu might have been interpolated, or added later in Bāla Kānda, to describe Rāma as an incarnation of Vishnu. Seemingly, Vālmiki, a contemporary of Rāma, may not have described him as an incarnation of Vishnu. The following ślokas of the last Sarga of Yuddha Kānda unambiguously indicate interpolations in Vālmiki Rāmāyaṇa.[4]

शृणोति य इदं काव्यं पुरा वाल्मीकिना कृतम्।
श्रद्दधानो जितक्रोधो दुर्गाण्यतितरत्यसौ॥
समागम्य प्रवासान्ते रमन्ते सह बान्धवैः।
शृण्वन्ति य इदं काव्यं पुरा वाल्मीकिना कृतम्॥
पूजयंश्च पठंश्चनमितिहासं पुरातनम्।
एवमेतत्पुरावृत्तमाख्यानं भद्रमस्तु वः॥
भक्त्या रामस्य ये चेमां संहितामृषिणा कृताम्।

These ślokas of Yuddha Kānda of the Rāmāyaṇa clearly mention that Vālmiki wrote this Kāvya in ancient times. Evidently, these ślokas are interpolations. Moreover, it may be incorrect to compute the exaltation of planets based on the ephemeris evolved after 4300 BCE. Therefore, the exaltation of planets mentioned in the Rāmāyaṇa cannot be taken as absolute evidence. In Indian astrology, the exaltation points of the five planets, Sun and Moon are as under:

	Deep exaltation point
Sun	Aries (10°)
Moon	Taurus (3°)
Mars	Capricorn (28°)
Mercury	Virgo (15°)
Jupiter	Cancer (5°)
Saturn	Libra (20°)
Venus	Pisces (27°)

According to the author of Bundashin, a Zoroastrian text, the exaltation point of Mercury was traditionally located in Pisces and not in Virgo. Evidently, Mercury's exaltation in Virgo might have been introduced when the Sun used to exalt in Leo in ancient times, because Mercury's maximum elongation from the Sun would be only 27.8 degrees. Interestingly, the Thema Mundi, a Zoroastrian horoscope, shows the positions of planets at the beginning of the Universe. It is also believed that all planets were exalted on that day. Undoubtedly, this chart had been prepared around 10700-9700 BCE when the vernal equinox was shifted to Leo around 10700 BCE. The positions of planets as given in the Thema Mundi:

	Sun Sign
Sun	Leo
Moon	Cancer
Mars	Scorpio
Mercury	Virgo
Jupiter	Sagittarius
Saturn	Capricorn
Venus	Libra

Evidently, different schemes of exaltations existed at different times. Therefore, it may not be correct to establish the exaltation of planets in the Rāmāyaṇa era based on a later scheme of exaltation. Thus, the exaltation of planets cannot be a verifiable evidence to establish the birth date of Sri Rāma.

The reference of Chaitra as Dvādaśa Māsa (the twelfth month) also indicates the interpolation of verses in Bāla Kānda when the Vaiśākhādi calendar was in vogue and Vasanta Ritu commenced from Chaitra month around 2000-1000 BCE. Most probably, the Vaiśākhādi calendar was introduced when Vasanta Ritu commenced from Vaiśākha month, after 4000 BCE. Though the Chaitrādi calendar of Sūrya Siddhānta came into vogue after 6778 BCE, it came into popular use only few centuries before the Mahābhārata era. Āryabhaṭa and Lāṭadeva wrote their treatises based on Chaitrādi calendar around 3150 BCE and 3101 BCE respectively. Thus, ancient Indians continuously used only Māgha Śuklādi calendar (Amānta and Pūrṇimānta) from the Rigvedic era to the Mahābhārata era. Therefore, Vālmiki of the Rāmāyaṇa era certainly followed the Māgha Śuklādi calendar.

A Comet in Mūla Nakśatra: The Sheet Anchor for Dating of the Events of the Rāmāyaṇa Era

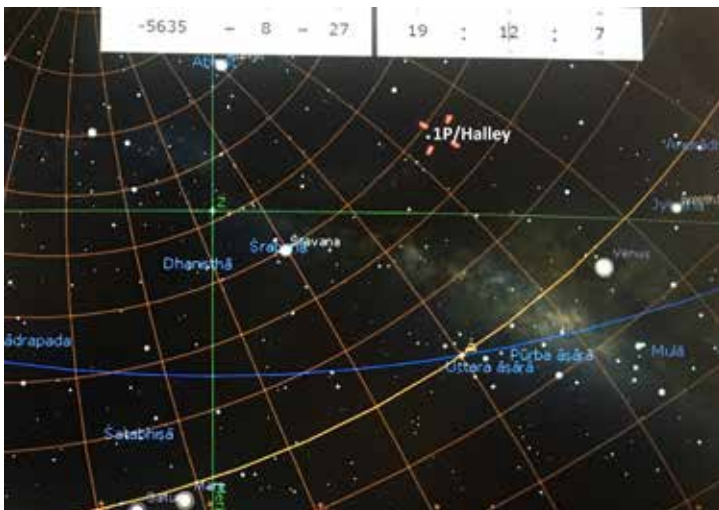
In Yuddha Kānda of the Rāmāyaṇa, Lakśmaṇa describes the position of a comet in Mūla Nakśatra when the Vānara army was ready to march towards Lanka.[5]

नैर्ऋतं नैर्ऋतानां च नक्षत्रम् अभिपीड्यते ।
मूलं मूलवता स्पृष्टं धूम्यते धूमकेतुना ॥
सारम् च एतद् विनाशाय राक्षसानाम् उपस्थितम् ।
काले कालगृहीतानां नक्षत्रं ग्रहपीडितम् ॥

"The Mūla Nakśatra is badly aspected, in that it is touched by a comet risen with a tail of light and tormented by it. It has arrived for the destruction of Rākśasas, for, the star seized by death is oppressed by a planet in its last hour."

This amazing astronomical observation recorded in Vālmiki Rāmāyaṇa is indeed verifiable, and establishes a sheet anchor date for

arriving at the complete chronology of the events of the Rāmāyaṇa era. Maharishi Vālmiki clearly describes that a comet touched the root of Mūla Nakśatra (prathama pada) when the star was oppressed by a planet almost at the same time. Mūla Nakśatra's Devatā is Nirriti, which is well known as the Goddess of destruction. Therefore, the appearance of a comet in Mūla Nakśatra is traditionally considered to be a bad omen. As I have already explained based on the traditional evidence, the date of Rāmāyaṇa can be roughly around 5677-5577 BCE. Venus was in Mūla constellation around 22nd Aug - 3rd Sep 5635 BCE [as simulated by means of Stellarium 0.18.2 with algorithm of Delta T (JPL Horizons)]. Interestingly, the Halley's Comet (1P/Halley) had also entered Mūla Nakśatra on 23rd Aug 5635 BCE. The apparent magnitude of 1P/Halley was 2.14 on 23 Aug 5635 BCE, 1800 hrs. It was visible to the naked eye after sunset between 23rd Aug (magnitude 2.14) and 29 Aug (magnitude 3.05). Thereafter, it gradually faded away.

Since Rāvaṇa was born in Mūla Nakśatra, the appearance of Halley's Comet in Mūla Nakśatra in 5635 BCE has been assumed as an astrological indication of the destruction of Rākśasas. Thus, we can conclusively fix the date of Rāma-Rāvaṇa Yuddha in 5635 BCE. Considering the importance of the earliest astronomical observation of Halley's Comet during the Rāmāyaṇa era, the comet must be named as "**Rāmāyaṇa's Comet**".

The Chronology of the Events of the Rāmāyaṇa Era

Before proceeding on arriving at the chronology of the historical events of the Rāmāyaṇa era, it is pertinent to understand the evolution of Indian calendars. Entire Vedic corpus follows Māgha Śuklādi calendar of five-year Yuga with the scheme of Āṣāḍha-Pauṣa intercalation. The Vedic Saṁvatsara used to commence from the summer solstice in the early Vedic period. Seemingly, the Saṁvatsara of Devas commenced from the summer solstice at Dhaniṣṭhā, whereas the Saṁvatsara of Asuras commenced from the winter solstice at Āśleṣā. The Saṁvatsara of Devas had been reset to be from the autumnal equinox and the same of Asuras had been reset to be from the vernal equinox around 12000 BCE due to the precession of equinox. The Vedic calendar also followed the scheme of Ardha-māsa intercalation in the every twentieth year, which led to the evolution of Amānta and Pūrṇimānta Vedic calendars. Gradually, many Siddhāntas of intercalation evolved but the calendar remained the same from Śarad season to Śarad season. It appears that the Ardha-māsa intercalation was abandoned in the beginning of the 28th Tretā Yuga, i.e. 6777 BCE, but Amānta and Pūrṇimānta Vedic calendars continued to be in vogue. The Vedic Śaradādi calendar had been shifted from the autumnal equinox to the winter solstice around 4000 BCE. The Vedic Śaradādi calendar was more accurate before 5000 BCE because the half year (from the autumnal equinox to the vernal equinox) had more days than the other half year (from vernal equinox to autumnal equinox), but it gradually changed after 5000 BCE. Therefore, Indian astronomers like Āryabhaṭa and his pupil Lāṭadeva started propounding the accuracy of the Chaitra Śuklādi calendar from the Mahābhārata era (3162 BCE). Seemingly, one branch of Vasiṣṭha Siddhānta had introduced a Vaiśākhādi calendar around 3000-2000 BCE, considering the occurrence of vernal equinox in Vaiśākha month. Thus, various Indian calendars came into existence after the Mahābhārata era.

Since the events of the Rāmāyaṇa took place at the end of the 28th Tretā Yuga, around 5677-5577 BCE, the Vedic Śaradādi calendar was still in vogue during the Rāmāyaṇa era. It appears that Vālmiki followed the Pūrṇimānta Śaradādi calendar. The hoisting of Indra Dhvaja on Āśvayuja Pūrṇimā during the Rāmāyaṇa era clearly indicates the occurrence of

summer solstice in Āśvayuja month. Here is the seasonal calendar of Rāmāyaṇa era:

Seasons	**Pūrṇimānta Months**
Hemanta	Māgha & Phālguna
Śiśira	Chaitra & Vaiśākha
Vasanta	Jyeṣṭha & Āṣāḍha
Griṣma	Śrāvaṇa & Bhādrapada
Varṣa	Aśvayuja & Kārttika
Śarad	Mārgaśīrṣa & Puṣya

While describing the Hemanta Ritu to Rāma, Lakśmaṇa refers to the performance of Agrāyaṇa ritual (a Vedic ritual on the first day of Saṁvatsara) in Ayodhyā Kānda (अयम् स कालः संप्राप्तः प्रियो यः ते प्रियंवद। अलंकृत इव आभाति येन संवत्सरः शुभः॥ नवाग्रयणपूजाभिरभ्यर्च्य पितृदेवताः। कृताग्रयणकाः काले सन्तो विगतकल्मषाः ॥). Evidently, Vedāṅga Jyotiṣa calendar, i.e., Śaradādi calendar (Pūrṇimānta) and Pauṣa-Āṣāḍha intercalation, was in vogue during the Rāmāyaṇa era.

As I have already explained, the available Vālmiki Rāmāyaṇa had been recompiled around 2000-1000 BCE by the historians of Mithilā. The Tihutā Pañchāṅg or Maithili Vaiśākhādi calendar was already in popular use around 2000-1000 BCE. The Maithili historians were the followers of the Vaiśākhādi calendar. They had mistakenly composed some ślokas that conflict with the seasonal calendar followed by Vālmiki. In fact, one śloka of Ayodhyā Kānda mentions that Prince Rāma's coronation was fixed in Chaitra month (चैत्रः श्रीमानयं मासः पुण्यः पुष्पितकाननः। यौवराज्याय रामस्य सर्वमेवोपकल्प्यताम् ॥).[6] This śloka appears to be an interpolation, because it contradicts the other references that clearly indicate that the Saṁvatsara of the Rāmāyaṇa era commenced on Māgha Pratipadā (Pūrṇimānta) in Puṣya Nakśatra.

Araṇya Kānda indicates that Sītā was abducted by Rāvaṇa in Hemanta season and Rāvaṇa gave a time limit of 12 months (शृणु मैथिलि मत् वाक्यम् मासान् द्वादश भामिनि, कालेन अनेन न अभ्येषि यदि माम् चारुहासिनि ॥).[7] In Yuddha Kānda, it is indicated that Sītā requested Rāvaṇa to give time for one Saṁvatsara (सा तु सम्वत्सरम् कालम् मामयाचत भामिनी).[8] Evidently, Sītā

was abducted in the beginning of Hemanta season, i.e., in the first fortnight of Māgha month. Seemingly, Rāma and Lakśmaṇa met Hanuman and Sugriva and Rāma eliminated Vāli by the end of Phālguna month. Sugriva was coronated in the Chaitra month and he sent Vānara groups in all directions to find Sītā in the beginning of Vaiśākha month. It is stated in Kishkindha Kānda that Vānara groups could see Vasanta season after one month (तेषाम् मासो व्यतिक्रान्तो यो राज्ञा समयः कृतः। ततः पुष्पातिभाराग्रान् लताशतसमावृतान्। द्रुमान् वासन्तिकान् दृष्ट्वा बभूवुः भयशन्किताः॥).[9] During the Rāmāyaṇa era, Vasanta season was probably in Jyeṣṭha and Āṣāḍha months (Pūrṇimānta). Hanuman also saw Vasanta season in Lanka (स तु सम्हृष्ट सर्वाङ्गः प्राकारस्थो महाकपिः। पुष्पिताग्रान् वसन्तादौ ददर्श विविधान् द्रुमान्॥).[10]

There are some contradictions in the available text of the Rāmāyaṇa due to the errors committed by the Maithili historians. For instance, if Vānara groups could see Vasanta season after one month of their departure, then how come Rāma referred to the Vasanta season at Pampā Lake before his first meeting with Hanuman?

> अयम् वसन्तः सौमित्रे नाना विहगनादितः।
> सीतया विप्रहीणस्य शोक सन्दीपनो मम॥
> पूर्वो अयम् वार्षिको मासः श्रावणः सलिलागमः।
> प्रवृत्ताः सौम्य चत्वारो मासा वार्षिक संज्ञिताः॥
> चत्वारो वार्षिका मासा गता वर्षशतोपमाः।
> मम शोकाभितप्तस्य तथा सीताम् अपश्यतः॥
> वर्षासमयकालम् तु प्रतिज्ञाय हरीश्वरः।
> व्यतीतान् चतुरो मासान् विहरन् नावबुध्यते॥
> वयम् आश्वयुजे मासि कालसंख्याव्यवस्थिताः।
> प्रस्थिताः सोऽपि चातीतः किमतः कार्यमुत्तरम्॥[11]

It is stated that Śrāvaṇa was the first month of the rainy season but Indra Dhvaja (an indication of the beginning of rainy season) used to be hoisted on the full moon day of Āśvayuja month (इन्द्रध्वज इव उद्धूत पौर्णमास्याम् महीतले । अश्वयुक् समये मासि गत सत्त्वो विचेतनः॥).[12] Thus, Āśvayuja was the first month of the rainy season and not Śrāvaṇa. It is evident that the Maithili historians mistakenly considered Śrāvaṇa as the first month of the rainy season because they followed Vaiśākhādi calendar during their lifetime.

If we eliminate the errors committed by the Maithili historians, it is evident that the Śaradādi calendar of five-year Yuga cycle was in vogue during the Rāmāyaṇa era (5677-5577 BCE). The Hemanta season was in Māgha and Phālguna months (Pūrṇimānta months) during the Rāmāyaṇa era. Due to precession, the Hemanta season had been shifted to Mārgaśīrṣa and Puṣya months (Amānta months) around the epoch the Śakānta era (78 CE). This is the reason why we celebrate Vijaya Daśamī on Āśvayuja Śukla Daśamī. In all probability, Sītā was abducted in the beginning of the first month of Hemanta season and Rāma killed Rāvaṇa at the end of Śarad season. Thus, Rāma saved Sītā within the time limit of one year. Uttara Kānda also clearly indicates that Rāma returned to Ayodhyā in Hemanta Ritu. Rāma went to Aśoka Vana along with Sītā after his coronation and spent the second month of Śiśira season there.[13]

तथा तयोर्विहरतोः सीताराघवयोश्चिरम् ।
अत्यक्रामत् शुभः कान्तः शिशिरो भोगदः सदा॥
प्राप्तयोर्विविधान् भोगानतीतः शिशिरागमः।
एवं तेशां ययौ मासो द्वितीयः शैशिरः सुखम्॥

Evidently, later updaters of the Rāmāyaṇa, who composed or edited many verses were ignorant of the difference between the seasonal calendar of the Rāmāyaṇa era and that of their lifetime. This is the reason why there are some contradictory descriptions of seasons in the Rāmāyaṇa. Sh. Nilesh Oak mistakenly assumes that the Chaitra month of the Rāmāyaṇa era appeared during the peak of Śarad season but Vālmiki clearly indicates the performance of "Agrāyaṇa" ritual just before the beginning of the Hemanta season. The entire Vedic tradition indicates that the Agrāyaṇa ritual can be performed only in accordance with the Māghādi calendar (Amānta or Pūrṇimānta) of Vedāṅga Jyotiṣa calendar.

The Date of Birth of Sri Rāma

According to the Rāmāyaṇa, Sri Rāma was 25 years old and Sītā was 18 years old when they left Ayodhyā for Vanavāsa of fourteen years (मम भर्ता महातेजा वयसा पंचविंशकः, अष्टादश हि वर्षाणि मम जन्मनि गण्यते॥).[14] The later updaters of Rāmāyaṇa have created some confusion about the age of Sri Rāma and Sītā. According to my research, Sītā was at least in

her 13th year when she married Rāma. There was no tradition of child marriage in ancient India. Ayodhyā Kānda clearly indicates that Sītā had already attained the age of menstruation before her marriage (पति सम्योगसुलभम् वयो दृष्ट्वा तु मे पिता। चिन्ताम् अभ्यगमद् दीनो वित्तनाशाद् इव अधनः ॥).[15] Anasūyā, the wife of Rishi Atri, gives her instructions to Sītā on the responsibilities of a devoted wife, which also indicates that Sītā was a teenager who can understand her responsibilities. Considering a gap of seven years between the age of Rāma and Sītā, it can be concluded that Rāma was 25 years old when he left Ayodhyā for Vanavāsa and he killed Rāvaṇa when he was 39 years old. As already explained, Rāma-Rāvaṇa Yuddha took place in 5635 BCE. Therefore, Sri Rāma was born on Chaitra Śukla Navamī, i.e., 3rd Feb 5674 BCE. Interestingly, Saturn was in deep exaltation (Libra 26°52') on 3rd Feb 5674 BCE.

The Date of Birth of Sītā

Traditional legends relate that Sītā was born on Vaiśākha Śukla Navamī. It is also believed that Sītā was born in Puṣya Nakśatra. Since Sītā was seven years younger than Rāma, she was born on 15th/16th Mar 5667 BCE, Vaiśākha Śukla Navamī, Maghā Nakśatra, but Puṣya Nakśatra was on Vaiśākha Śukla Saptamī. One Nakśatra difference is possible based on the scheme of Kśaya tithi. Seemingly, Sītā was born in the beginning of Vaishākha Śukla Navami, in the fourth pada of Puṣya Nakśatra.

The Date of Vivāha Pañchamī

Mithilā region of India and Nepal celebrates the Vivāha Pañchamī festival (wedding day of Rāma and Sītā) on Mārgaśīrṣa Śukla Pañchamī in the Maithili calendar. Considering the precession of seasonal calendar by three months around 78 CE, the date of the wedding of Rāma and Sītā would be Phālguna Śukla Pañchamī – but the Rāmāyaṇa indicates that Rāma and Sītā were married in Uttara Phālgunī Nakśatra (मघा हि अद्य महाबाहो तृतीये दिवसे प्रभो। फल्गुन्याम् उत्तरे राजन् तस्मिन् वैवाहिकम् कुरु ॥[16] उत्तरे दिवसे ब्रह्मन् फल्गुनीभ्याम् मनीषिणः। वैवाहिकम् प्रशंसन्ति भगो यत्र प्रजापतिः ॥[17]). Bhaga is the Prajapati of Pūrva Phālgunī Nakśatra. Thus, the Rāmāyaṇa indicates a Vivāha muhūrta between Pūrva and Uttara Phālgunī Nakśatras. In modern times, Mārgaśīrṣa Śukla Pañchamī occurs in Śravaṇa Nakśatra,

which is not consistent with the evidence of the Rāmāyaṇa. During the Rāmāyaṇa era (5677-5577 BCE), the Śukla Pañchamī tithi of Mārgaśīrṣa, Puṣya, Māgha and Phālguna months used to occur in Dhaniṣṭhā, Uttarabhadrā, Aśvinī and Krittikā Nakśatras respectively. According to Baudhāyana Sūtras, Rohiṇī, Mrigaśirā, Uttara Phālgunī and Svāti were the best Nakśatras for marriage. Therefore, it is certain that the wedding of Rāma and Sītā took place in between Pūrva Phālgunī and Uttara Phālgunī Nakśatras, and the tithi was Pañchamī because the Rāmāyaṇa refers to Maghā on the third day.

Seemingly, Ayodhyā-Mithilā region followed Pūrṇimānta Vedic calendar during the Rāmāyaṇa era. It appears that when Vaiśākhādi Amānta calendar (Tihuta Pañchāṅg or Maithili calendar) was introduced, the date of Vivāha Pañchamī had been erroneously fixed in Śukla Pakśa instead of Krishna Pakśa. Due to precession, the date of Vivāha Pañchamī shifted from Phalguna month to Mārgaśīrṣa month in modern times. In all probability, the wedding of Rāma and Sītā took place on Puschya/ Māgha Krishna Pañchamī, 5th Dec 5655 BCE. Thus, Rāma was 19 years and 10 months old and Sītā was 12 years 9 months old on the day of their marriage. Probably, Daśaratha stated "ऊनविशतिवर्षो मे रामो राजीवलोचनः" instead of "ऊनषोडशवर्षो मे रामो राजीवलोचनः" in Bālakānda.

The Day Rāma, Sītā and Lakśmaṇa left for Vanavāsa

It appears that Rāma and Sītā lived in Ayodhyā for five years after their marriage because the Rāmāyaṇa mentions that Rāma was 25 years old and Sītā was 18 years old when they left Ayodhyā for Vanavāsa. Some ślokas of Araṇya Kānda and Sundara Kānda ("उषित्वा द्वादश समाः इक्ष्वाकूणाम् निवेशने", "समा द्वादश तत्र अहम् राघवस्य निवेशने", "ततः त्रयोदशे वर्षे", "संवत्सरं चाध्युषिता राघवस्य निवेशने" and so on) indicate that Sītā lived in Ayodhyā for twelve years, or one year, but these verses appear to be either edited or interpolated by the Maithili historians due to the confusion about the age of Rāma and Sītā. In reality, Sītā lived for twelve years in Mithilā and got married in the 13th year of her life.

Internal astronomical evidence also supports that Rāma was 25 years old when he left for Vanavāsa. Rāmāyaṇa mentions that Rāma's coronation was fixed on Pauṣa Pūrṇimā or Māgha Krishna Pratipadā, Puṣya Nakśatra

(उदिते विमले सूर्ये पुष्ये चाभ्यागते अहनि, अभिषेकाय रामस्य[18], अद्य चन्द्रोभ्युपगतः पुष्यात्पूर्वं पुनर्वसू। श्वः पुष्ययोगं नियतं वक्ष्यन्ते दैवचिन्तकाः॥ ततः पुष्येऽभिषिञ्चस्व मनस्त्वरयतीव माम्। श्वस्त्वाहमभिषेक्ष्यामि यौवराज्ये परंतप॥[19]). While talking to Rāma one day before his coronation, Daśaratha tells Rāma that he has become old after living for a long period and enjoyed all the luxuries in his life (राम वृद्धोऽस्मि दीर्घायुर्भुक्ता भोगा मयेप्सिताः ।[20]) but he is getting fearful and seeing inauspicious dreams and asteroids are falling in the day time with great sound these days (अपि चाद्याशुभान् राम स्वप्ने पश्यामि दारुणान्। सनिर्घाता दिवोल्का च पतन्तीह महास्वनाः॥[21]).

Daśaratha also indicates to Rāma that the court astrologers are cautioning him that his Janma Nakśatra had already been encroached upon by Sun, Mars and Rāhu (अवष्टब्धं च मे राम नक्षत्रं दारुणैर्ग्रहैः। आवेदयन्ति दैवज्ञाः सूर्याङ्गारकराहुभिः॥).[22] The Sanskrit word "अवष्टब्धं" has "क्त" suffix (भूते, क्तक्तवतू निष्ठा) in Bhūtakāla (recent past), which clearly indicates the occurrence of encroachment of Daśaratha's Janma Nakśatra by Sun, Mars and Rāhu in the recent past. Daśaratha was indicating to Rāma about a disastrous astrological omen that may lead to his own imminent death. Unfortunately, the Rāmāyaṇa did not mention the Janma Nakśatra of Daśaratha. Since Daśaratha was talking to Rāma a day before his coronation, all Rāmāyaṇa researchers generally assumed Revatī or Uttarabhādrapada or Aśvinī as Daśaratha's Janma Nakśatra but failed to establish the conjunction of Sun, Mars and Rāhu in one Nakśatra. Sh. Nilesh Oak has claimed that this astronomical reference of the conjunction of Sun, Mars and Rahu corroborate well for 20/21 Dec 12222 BCE (with 0 year), but only Sun and Mars were in Revatī Nakśatra then. Rāhu was not in Revatī Nakśatra on that day. Moreover, the conjunction of Sun and Mars was negative on 20/21 Dec 12222 BCE because Mars was in the higher pāda of Revatī whereas Sun was in the lower pāda of Revatī. Rahu's presence near Mars in Revatī would have turned the results into positive. Thus, none of the Rāmāyaṇa researchers could establish the disastrous conjunction of Sun, Mars and Rāhu in the year of Rāma's planned coronation in Puṣya Nakśatra.

Astrologically, it is extremely important to establish the conjunction of Sun, Mars and Rāhu because Daśaratha was referring to the warning given by the court astrologers. As Rāhu is well known to destroy the results

of the planets it is sitting with, it is also important to establish the positive part of the conjunction of Sun and Mars in Janma Nakśatra of Daśaratha. If Rāhu is sitting with the positive conjunction of Sun and Mars, it destroys the positive results, which indicates a major disaster or the imminent death of the king. If Rāhu is sitting with the negative conjunction of Sun and Mars, it destroys the negative results, which indicates a positive outcome in the future. Since Daśaratha was referring to a disastrous omen, it is certain that the Sun and Mars were in the positive conjunction.

Though Sun and Mars are fast moving planets, they do not commonly conjunct in horoscope. Generally, the conjunction of Sun and Mars occurs roughly after every two years and few days. When Mars is holding the lowest degree and Sun has the highest degree, then Mars controls the conjunction and gives negative results. When Sun is holding the lowest degree and Mars has the highest degree, then Sun controls the conjunction and gives positive results. Evidently, Sun should be positioned in the lowest pāda (quarter) whereas Mars should be positioned in the highest pāda of Daśaratha's Janma Nakśatra.

Daśaratha's Janma Nakśatra (Birth Star)

Though the critical edition of Ramayana has no direct reference of Daśaratha's Janma Nakśatra, many old manuscripts indicate that Viśākhā was the janma Nakśatra of Daśaratha. A critical edition of Ramayana published by Dr. PL Vaidya, Oriental Institute, Baroda, 1962 has excluded the following two slokas after 17th and 18th sloka of 4th Sarga of Ayodhya Kanda as available in some old manuscripts.

रोहिणीष्ववस्थितो राहुर्विशाखासु पुनर्ययौ
एवं वदन्ति दैवज्ञाः योगं राजविनाषकम् ।।
उपविष्टो विशाखासु रोहिणीष्ववसितो ग्रहः (रोहिणी ग्रसते ग्रहः?)
निवान्ति वाताः परुषाः सशैलाः भूश्च कम्पते ।।

These two slokas unambiguously indicate that Viśākhā was the birth star of Daśaratha. The court astrologers of Daśaratha might have observed the occurrence of solar eclipse in Rohini Nakśatra in year of Rama's planned coronation and marked the position of Rahu in Viśākhā and Ketu in Rohini. The statement "रोहिणीष्ववस्थितो राहुर्विशाखासु पुनर्ययौ" indicates that

the astrologers observed that Rahu was in Rohini earlier and now it is positioned in Viśākhā. Seemingly, the astrologers of Ramayana era had observed a solar eclipse in 5659 BCE in Viśākhā Nakśatra and considered the position of Rahu in Rohini in Sep 5659 BCE. The same astrologers might have observed a solar eclipse on 19th Mar 5649 BCE in Rohini Nakśatra and marked the position of Rahu in Viśākhā Nakśatra. Ramayana refers to Viśākhā Nakśatra as the Nakśatra of Ikshvakus (विमले च प्रकाशेते विशाखे निरुपद्रवे, नक्षत्रम् परम् अस्माकम् इक्ष्वाकूणाम् महात्मनाम्।।). Evidently, these references clearly indicate that Viśākhā was the birth star of Daśaratha.

Astrologically, it is important to establish the conjunction of Sun, Mars and Rāhu in Viśākhā because Daśaratha was referring to the warning given by the court astrologers. As Rāhu is well known to destroy the results of the planets it is sitting with, it is also important to establish the positive part of the conjunction of Sun and Mars in Janma Nakśatra of Daśaratha. If Rāhu is sitting with the positive conjunction of Sun and Mars, it destroys the positive results, which indicates a major disaster or the imminent death of the king. If Rāhu is sitting with the negative conjunction of Sun and Mars, it destroys the negative results, which indicates a positive outcome in the future. Since Daśaratha was referring to a disastrous omen, it is certain that the Sun and Mars were in the positive conjunction.

Though Sun and Mars are fast moving planets, they do not commonly conjunct in horoscope. Generally, the conjunction of Sun and Mars occurs roughly after every two years and few days. When Mars is holding the lowest degree and Sun has the highest degree, then Mars controls the conjunction and gives negative results. When Sun is holding the lowest degree and Mars has the highest degree, then Sun controls the conjunction and gives positive results. Evidently, Sun should be positioned in the lowest pāda (quarter) whereas Mars should be positioned in the highest pāda of Daśaratha's Janma Nakśatra i.e. Viśākhā.

Considering the occurrence of this astronomical event in the recent past, the conjunction of Sun, Mars and Rāhu took place in Viśākhā Nakśatra around 21st Sep 5649 BCE, and Rāma's coronation was planned on 26th Nov 5649 BCE in Puṣya Nakśatra [Pauṣa Pūrṇimā / Māgha Krishna

Pratipadā in Pūrṇimānta calendar and Pauṣa Pūrṇimā / Pauṣa Krishna Pratipadā in Amānta calendar].

Sun and Rāhu were in the fourth pāda of Viśākhā Nakśatra and Mars was in the first pāda of Viśākhā Nakśatra. Thus, Sun and Mars were in the positive conjunction. Since Rahu was sitting with the Sun in the fourth pada, it was a disastrous omen. Thus, we can conclusively establish Viśākhā Nakśatra as the Janma Nakśatra of Daśaratha. This was the reason why Daśaratha was getting fearful and inauspicious dreams. Daśaratha planned Rama's coronation on 26th Nov 5649 BCE but Rāma left Ayodhyā for 14-year Vanavāsa on the same day.

Stellarium software simulation shows the position of Mars in the fourth pada of Svati Nakśatra whereas Jagannath Hora shows the position of Rahu in the fourth pada of Chitra Nakśatra on 21st Sep 5649 BCE. There was also a similar conjunction of Sun, Mars and Rahu in Chitra Nakśatra around 21st Aug 5649 BCE.

It is certain that Jagannatha Hora's algorithm has an error of two Nakśatras when we calculate the position of Rāhu during the Ramayana and Mahabharata eras (5677-3000 BCE). Though Stellarium software simulation with 'JPL Horizons' time correction shows the position of Mars in the 4th pada of Svāti Nakśatra because it considers an average gravitational acceleration on Mars but a four degree difference in position of Mars was possible due to faster gravitational acceleration around 21st Sep 5649 BCE. Thus, we can conclusively establish that Viśākhā Nakśatra was the birth Nakśatra of Daśaratha.

There is also a speculation that Rāma left for Vanavāsa on his birthday (Chaitra Śukla Navamī), based on one additional line of a śloka (lagne Karkaṭake prāpte, Janma Rāmasya cha sthite). It is certainly an interpolation or a note written by the later updaters because there was no tradition of writing verses in half or one and a half meter and it also contradicts with other references of seasons in Ramayana.

All Rāmāyaṇa researchers generally assumed Revatī or Uttarabhādrapada or Aśvinī as Daśaratha's Janma Nakśatra in contrary to internal evidence. Moreover, they failed to establish the astronomical and astrological conjunction of Sun, Mars and Rāhu in one Nakśatra.

1. Sh. Pushkar Bhatnagar: He has proposed the date as 5th Jan 5089 BCE. The conjunction of Sun and Mars was in Shatabhishaj Nakśatra but Rahu was in Chitra (Uttara Phalguni in Jagannatha Hora). Moreover, Sun was in higher pada of Shatabhishaj whereas Mars was in lower pada.

2. Sh. Nilesh Oak: He has claimed that this astronomical reference of the conjunction of Sun, Mars and Rahu corroborate well for 20th/21st December 12222 BCE (with 0 year), but Sun and Mars were in Revatī Nakśatra on that date. Rāhu was not in Revatī Nakśatra on that day but it was in Ashvini. Moreover, the conjunction of Sun and Mars was negative on 20th/21st Dec 12222 BCE because Mars was in the higher pāda of Revatī whereas Sun was in the lower pāda of Revatī. Rahu's presence near Mars in Revatī would have turned the results into positive. Thus, the date 20th/21st Dec 12222 BCE fails to explain the bad omen astrologically.

Interestingly, the astronomical observation of a comet and a planet in Mūla Nakśatra in the year of Rāma-Rāvaṇa War, and the astrological conjunction of Sun, Mars and Rāhu in the year when Rāma left Ayodhyā for Vanavāsa, lead to the most accurate dating of the events of the Rāmāyaṇa era. The astrological conjunction of Sun, Mars and Rāhu is not only very rare but also to be observed at least a few months before the commencement of Rāma's Vanavāsa. As explained above, Halley's Comet along with Venus was visible to naked eye in Mūla Nakśatra around 21st/23rd Aug - 3rd Sep 5635 BCE in the fourteenth year of Rāma's Vanavāsa, and the disastrous conjunction of Sun, Mars and Rahu took place in Vishākhā Nakśatra around 21 Sep 5649 BCE, before Rāma left Ayodhyā for Vanavāsa on 26th Nov 5649 BCE.

Though the scheme of the exaltation of planets during the Rāmāyaṇa era is not known, Saturn was in Libra (26°52') when Rāma was born, on 3rd Feb 5674 BCE, and Jupiter was in Cancer (12°04') when Rāma's coronation was planned, on 26th Nov 5649 BCE.

Vālmiki mentioned that Triśaṅku (Acrux), Lohintāṅga (Mars), Brihaspati (Jupiter), as also Budha (Mercury) and all other planets assumed a menacing aspect and got stayed with the Moon, and stars ceased to twinkle. Planets were deprived of their splendour. The stars of Viśākhā constellation appeared in Heaven, veiled in a mist when Rāma

left Ayodhyā (त्रिशंकुर्लोहिताङ्गः च बृहस्पतिबुधावपि। दारुणाः सोमम् अभ्येत्य ग्रहाः सर्वे व्यवस्थिताः॥ नक्षत्राणि गतार्चींषि ग्रहाः च गततेजसः। विशाखाः च सधूमाः च नभसि प्रचकाशिरे॥).[23] Vālmiki was describing the sky of the night on the day Rāma left Ayodhyā. He clearly indicated that Triśaṅku, all planets, Moon and Viśākhā constellation were visible in the sky. Since Rāma left Ayodhyā on 24th/25th Nov 5649 BCE, Vālmiki was describing the night sky of 25th /26th Nov 5649 BCE. Triśaṅku, all planets, Moon and Viśākhā constellation were visible on 25th /26th Nov 5649 BCE before the dawn. Sh. Nilesh Oak could not establish this simple astronomical observation on the date proposed by him therefore he has assumed it to be extremely generic, but the Rāmāyaṇa unambiguously tells us that Triśaṅku, all planets, Moon and Viśākhā constellation were visible in the night sky. As far as the menacing aspect of this observation is concerned, this requires study by an expert astrologer.

The Date of Bharata's Meeting with Rāma at Chitrakūṭa

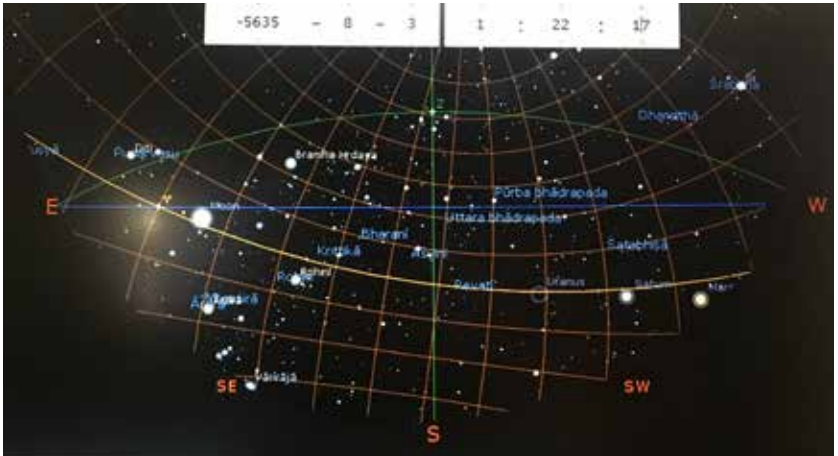
Sh. Nilesh Oak has claimed that the Rāmāyaṇa refers to Sun and Moon conjoining with Venus and Jupiter on the day Bharata met Rāma at Chitrakūṭa. Rāmāyaṇa states:

> ततः सुमन्त्रेण गुहेन चैव। समीयतू राजसुतावरण्ये ।
> दिवाकरः चैव निशाकरः च। यथाम्बरे शुक्रबृहस्पतिभ्याम्॥[24]

"The princes Rāma and Lakśmaṇa were seen by Sumantra and Guha, as in the sky, the Sun and the Moon are seen in conjunction with Venus and Jupiter."

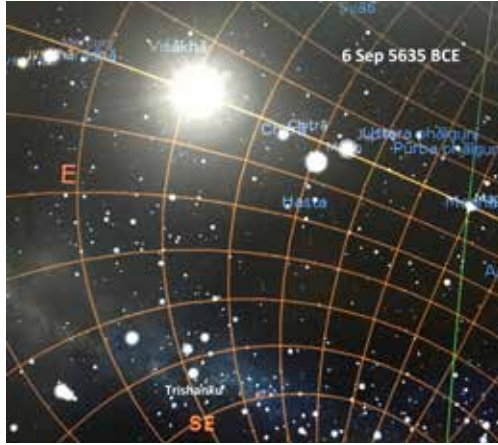
Though it can be explained to be on 27th May 5648 BCE, I would strictly refrain from speculating astronomical observations based on metaphorical comparisons. Vālmiki as a poet had the freedom to metaphorically compare the events of the Rāmāyaṇa with the past or current astronomical events. It would be difficult to establish all metaphorical comparisons as current astronomical events. Therefore, we should not consider the statements with "यथा" or "इव" as current astronomical observations.

The Date of Hanuman's Return from Lanka

Hanuman returned from Lanka and met his Vānara army on the seashore near Mahendragiri (Tirunelveli District, Tamilnadu) on 3rd Aug 5635 BCE, almost one month before Rāma ordered Vānara Sena to depart for Lanka on 5nd Sep 5635 BCE. Vālmiki describes the night sky when Hanuman returned from Lanka and poetically indicates that Tiṣya (Puṣya) and Śravaṇa Nakśatras appeared like swans, Punarvasu Nakśatra appeared like a big fish, Mars appeared like a crocodile and so on (सचन्द्र कुमुदम् रम्यम् सार्ककारण्डवम् शुभम्। तिष्यश्रवण कदम्बम् अभ्रशैवल शाद्वलम्॥ पुनर्वसु महामीनम् लोहिताङ्गमहाग्रहम्। ऐरावतमहाद्वीपम् स्वातिहंसविलोडितम्॥).[25]

The Day Rāma Ordered Vānara Sena to Depart for Lanka

I have already discussed the visibility of Halley's Comet and the position of a planet (Venus) in Mūla Nakśatra around 23rd Aug - 5th Sep 5635 BCE. Rāma ordered Vānara Sena to depart for Lanka at noon on 5th Sep 5635 BCE, Uttara Phālgunī Nakśatra (अस्मिन् मुहूर्ते सुग्रीव प्रयाणम् अभिरोचये। युक्तो मुहूर्तो विजयः प्राप्तो मध्यम् दिवाकरः ॥, उत्तरा फल्गुनी हि अद्य श्वस् तु हस्तेन योक्ष्यते। अभिप्रयाम सुग्रीव सर्वानीकसमावृताः ॥).[26]

While speaking to Rāma, Lakśmaṇa mentions that the planet of Venus, with its bright light, born from the sage Bhrigu, is hanging behind him (उशना च प्रसन्नार्चिरनु त्वाम् भार्गवो गतः ॥).[27] Since Rāma, Lakśmaṇa and Vānara Sena were marching towards Lanka from Kishkindha (from West to East), Venus was above the western horizon and it appeared to be hanging behind Rāma. Venus was exactly in the West on 6th Sep 5635 BCE.

Lakśmaṇa also states that the Rājarshi Triśaṅku (Acrux), their paternal grandfather, born in the Ikśvāku Dynasty, is shining purely (as a star) in front (in the East), along with his family priest. Viśākhā stars of the supreme constellation are shining clearly without any evil influence (त्रिशंकुर्विमलो भाति राजर्षिः सपुरोहितः। पितामहवरो अस्माकम् इक्ष्वाकूणाम् महात्मनाम् ॥ विमले च प्रकाशेते विशाखे निरुपद्रवे। नक्षत्रम् परम् अस्माकम् इक्ष्वाकूणाम् महात्मनाम् ॥).[28] Evidently, Lakśmaṇa refers to the rising of Viśākhā and Triśaṅku stars in the East in the early morning. The Sun had just entered the prathama pāda of Viśākhā Nakśatra on 6th Sep 5635 BCE and there was no indication of evil influence.

Lakśmaṇa also refers to the circumpolar stars of Brahmarāśi and Saptarṣi constellations. We will discuss the identification of Brahmarāśi in the forthcoming paragraphs.

Sh. Nilesh Oak could not explain the observations of Venus, Viśākhā and Triśaṅku in his chronological framework. He has simply assumed these observations to be too generic to comment. Another inconsistency in his chronology is that he assumes the appearance of Comet 2P/Encke around 1st Sep – 11th Sep 12208 BCE (with 0 year in Julian calendar) but establishes that Rāma left from Kishkindha for Lanka on 29-30 Sep 12208 BCE. The Comet 2P/Encke was not visible to the naked eye after 10th Sep 12208 BCE. If Rāma left on 29-30 Sep 12208 BCE, then how was Lakśmaṇa referring to the visibility of a comet in Mūla Nakśatra in the present tense after 20 days? Evidently, the chronological framework of Nilesh Oak fails to establish the visibility of a comet in Mūla Nakśatra on 29-30 Sep 12208 BCE. Moreover, Venus was rising in the East on 29-30 Sep 12208 BCE, which is contrary to the observation of Venus recorded in the Rāmāyaṇa.

The Date of Rāvaṇa Vadha

There is a divergence of opinion about the duration of the war between Rāma and Rāvaṇa. According to some researchers, it spanned for thirteen days. The traditional evidence indicates that Rāma killed Rāvaṇa on Śukla Daśamī. In modern times, we celebrate Vijaya Daśamī festival on

Āśvayuja Śukla Daśamī. Padma Purāṇa informs us that the duration of the war was eighty-seven days. Vālmiki Rāmāyaṇa does not indicate any specific duration of the war, directly or indirectly. Therefore, I would rely on the traditional evidence of Padma Purāṇa but it simply mentions that the war spanned for eighty-seven days.

I would imagine that Padma Purāṇa counted the total duration of the war from the day Rāma, Lakśmaṇa and Vānara Sena left Kishkindha, to the day Rāma killed Rāvaṇa. I have already explained that Vānara Sena left Kishkindha on 5th Sep 5635 BCE. If we add eighty-seven days to 2nd Sep 5635 BCE, the eighty-seventh day was 30th Nov 5635 BCE. It indicates that Rāma killed Rāvaṇa on Māgha Krishna Daśamī (in Pūrṇimānta calendar) and on Pauṣa Krishna Daśamī (in Amānta calendar).

As I have already explained, the Ayodhyā-Mithilā region followed Pūrṇimānta Vedic calendar during the Rāmāyaṇa era. It appears that when Chaitrādi Amānta calendar (Sūrya Siddhānta) was introduced in 78 CE, the date of Vijaya Daśamī has been erroneously fixed in Śukla Pakśa instead of Krishna Pakśa. Due to precession of seasonal calendar, the date of Vijaya Daśamī got shifted from Māgha month to Āśvayuja month in modern times.

Yuddha Kānda of Rāmāyaṇa mentions that Mercury was in Rohiṇī Nakśatra, Sun was united with a comet and Mars was in Viśākhā Nakśatra (प्राजापत्यम् च नक्षत्रम् रोहिणीं शशिनः प्रियाम्। समाक्रम्य बुधस्तस्थौ प्रजानामशुभावहः॥ अदृश्यत कबन्धाङ्गः सन्सक्तो धूमकेतुना। कोसलानाम् च नक्षत्रम् व्यक्तमिन्द्राग्निदैवतम्॥ आक्रम्याङ्गारकस्तस्थौ विशाखामपि चाम्बरे॥).[29] In my opinion, there are many interpolations in the sargas that describe the Rāma-Rāvaṇa War. The 102nd Sarga mythologically describes that Indra sent his chariot and his Sārathi Mātali from Heaven to Earth with an objective to assist Rāma. Evidently, later updaters had exaggerated the narration of Rāma-Rāvaṇa Yuddha. Since the later updaters had followed the Vaiśākhādi calendar, they mistakenly assumed the position of Mercury in Rohiṇī Nakśatra on the day Rāma killed Rāvaṇa.

The Day Rāma Returned to Ayodhyā

Rāma might have stayed for two days in Lanka. Seemingly, Rāma

coronated Vibhīṣaṇa on 1st / 2nd Dec 5635 BCE and left Lanka on 3rd Dec Dec 5635 BCE. Vibhīṣaṇa arranged for Puṣpaka Vimāna because Rāma desired to return to Ayodhyā as soon as possible.

It appears that the Puṣpaka Vimāna travelled roughly 200 km per day and Rāma reached the Ashrama of Rishi Bhāradwāja on 18th Dec 5635 BCE, Punarvasu Nakśatra. Rishi Bhāradwāja advices Rāma meets Bharata the next day in Puṣya Nakśatra (अविघ्नं पुष्ययोगेन श्वो रामं द्रष्टुमर्हसि ।[30]) because Rāma had left Ayodhyā in Puṣya Nakśatra fourteen years earlier. Therefore, Bharata met Rāma on 19th Dec 5635 BCE. Rāma reached Ayodhyā on Puṣpaka Vimāna on 20th Dec 5635 BCE, and he was coronated as the King of Ayodhyā Kingdom on 21st Dec 5635 BCE, Māgha Pūrṇimā (in Pūrṇimānta and Amānta calendars). It may be noted that Pūrṇimā tithi of coronation has been shifted to Amāvāsyā tithi due to the introduction of Amānta calendar. This is the reason why we celebrate Deepāvali on Amāvāsyā.

The Summary of the Chronology of the Rāmāyaṇa Era:

		In CE
1.	The Birth Date of Rāma (Rāma Navami)	3rd February 5674 BCE
2.	The Birth Date of Sītā (Jānakī Navami)	15th / 16th March 5667 BCE
3.	The Marriage of Rāma-Sītā (Vivāha Pañchamī)	5th December 5654 BCE
4.	Sri Rāma left Ayodhyā for Vanavāsa	26th November 5649 BCE
5.	Hanuman returned from Lanka	3rd August 5635 BCE
6.	Rāma ordered Vānara Sena to march towards Lanka	5th September 5635 BCE
7.	Rāma killed Rāvaṇa (Vijaya Daśamī)	30th November 5635 BCE
8.	Rāma arrived at Bhāradwāja Ashram	18th December 5635 BCE
9.	Rāma met Bharata	19th December 5635 BCE
10.	Rāma arrived in Ayodhyā	20th December 5635 BCE
11.	Rāma was coronated	21th December 5635 BCE

Brahmarāśi and Abhijit

Sh. Nilesh Oak has quoted the following verse and claimed that Brahmarāśi was another name of Abhijit and Abhijit was the North Pole star during the Rāmāyaṇa era.

> ब्रह्मराशिर्विशुद्धश्च शुद्धाश्च परमर्षयः ।
> अर्चिष्मन्तः प्रकाशन्ते ध्रुवं सर्वे प्रदक्षिणम् ॥[31]

Since all ancient Indian texts are written in Sanskrit, the in-depth knowledge of Sanskrit language and its grammar is the essential for valid translations. All alternative translations must comply with the Sanskrit language and grammar but, unfortunately, the translation suggested by Sh. Nilesh Oak completely violates the basic grammar of Sanskrit language. Since Sanskrit ślokas follow context-free grammar, we have to arrange the words in the context, which is called "Anvaya". Before presenting Anvaya, we have to understand the Vibhakti, Liṅga, Vachana, Kāraka, Kriyā, Viśeṣaṇa and Viśeṣya and more. Let us understand the basic grammar of the Sanskrit words used in this śloka.

1. ब्रह्मराशिः = Prathamā Vibhakti, Eka-vachana, Pulliṅga
2. विशुद्धः = Prathamā Vibhakti, Eka-vachana, Pulliṅga
3. च = Avyaya pada
4. शुद्धाः = Prathamā Vibhakti, Bahu-vachana, Pulliṅga
5. च = Avyaya pada
6. परमर्षयः = Prathamā Vibhakti, Bahu-vachana, Pulliṅga
7. अर्चिष्मन्तः = Prathamā Vibhakti, Bahu-vachana, Pulliṅga
8. प्रकाशन्ते = Vartamāna Kāla, Lat Lakāra, Prathama Puruṣa, Bahu-vachana
9. ध्रुवम् = Dvitīyā Vibhakti, Eka-vachana, Pulliṅga
10. सर्वे = Sarvanāma, Prathamā Vibhakti, Bahu-vachana, Pulliṅga
11. प्रदक्षिणम् = Dvitīyā Vibhakti, Eka-vachana, Napuṁsakaliṅga

Now we have to identify Viśeṣaṇas and Viśeṣyas. It is compulsory to have same Vibhakti and Vachana for Viśeṣaṇa and Viśeṣya. "विशुद्धः" is the Viśeṣaṇa of "ब्रह्मराशिः" and "शुद्धाः" is the Viśeṣaṇa of "परमर्षयः". The Anvaya using the same words of the śloka would be:

विशुद्धः ब्रह्मराशिः च शुद्धाः परमर्षयः च सर्वे अर्चिष्मन्तः ध्रुवम् प्रदक्षिणम् प्रकाशन्ते ॥

The meaning of the śloka word by word: विशुद्धः = absolute, ब्रह्मराशिः = a constellation named Brahmarāśi, शुद्धाः = absolute, परमर्षयः = the constellation of Saptarṣis, च = also, सर्वे = all, अर्चिष्मन्तः = Stars (of Brahmarāśi and Saptarṣis), प्रदक्षिणम् = revolving around, ध्रुवम् = North Pole, प्रकाशन्ते= illuminating. Thus, the translation of the śloka would be: "The stars of Brahmarāśi and Saptarṣi constellations illuminate revolving round the North celestial pole."

According to Sanskrit grammar, "ब्रह्मराशिः" and "परमर्षयः" are the *Kartā* of "प्रकाशन्ते". Since " ध्रुवम् " is used in Dvitīyā Vibhakti and "ब्रह्मराशिः" is used in Prathamā Vibhakti, both can never be Viśeṣaṇa and Viśeṣya. Two words used in different Vibhaktis and vachanas cannot have the relation of Viśeṣaṇa-Viśeṣya. Therefore, "ब्रह्मराशिः" can never be translated as Dhruva. Sh. Nilesh Oak has mistakenly translated them as Viśeṣaṇa and Viśeṣya. If the śloka had the words as "विशुद्धम् ब्रह्मराशिम्" (Dvitīyā Vibhakti), then the translation of Sh. Nilesh Oak would have been correct but the śloka used "विशुद्धः ब्रह्मराशिः" in Prathamā Vibhakti as *Kartā* of "प्रकाशन्ते" . Therefore, the translation, "Seven rishis are making Parikramā around Brahmarāśi (Abhijit), the Dhruva, i.e., the pole star" does not follow the basic rules of Sanskrit grammar. Moreover, Rāśi means 'a group' in Sanskrit. Therefore, Brahmarāśi may refer to a group of stars (a constellation) and not one star (Abhijit).

This śloka also used an epithet "Viśuddha" for Brahmarāśi. A constellation or a group of stars can only be referred to as Śuddha or Viśuddha. Therefore, Viśuddha word would be meaningless if Brahmarāśi means a particular Nakśatra (Abhijit). In fact, this śloka unambiguously tells us that some stars of Brahmarāśi are making Parikramā around Dhruva. The verb "Prakāśante" is in present tense. Therefore, it indicates the circumpolar nature of the stars of Brahmarāśi and Saptarṣi constellations. The Rāmāyaṇa also refers to Abhijit Nakśatra by name in Kishkindha Kānda and indicates that Brahmarāśi and Abhijit are two different celestial bodies. Therefore, the Rāmāyaṇa has no internal evidence to establish that Brahmarāśi and Abhijit are identical.

अथ पवन समान विक्रमाः प्लवग वराः प्रतिलब्ध पौरुषाः ।
अभिजित् अभिमुखां दिशं ययुः जनकसुता परिमार्गणोन्मुखाः ।।[32]

"अभिजित् अभिमुखां दिशं" means the direction that's facing towards Abhijit Nakśatra. Since Abhijit Nakśatra, the brightest star, is stationed in the North direction, the South direction has been referred to as "अभिजित् अभिमुखां दिशं" in the Rāmāyaṇa. It is also argued that since Brahma is the deity of Abhijit, Brahmarāśi and Abhijit are the same. Abhijit is well known as Brāhma Nakśatra but Parāśaratantra unambiguously mentions Brāhma Nakśatra and Brahmarāśi as two separate entities in the context of the comet Chalaketu.

"पञ्चदशवर्षशतं प्रोष्योदितः पश्चिमेनांगुलिपर्वमात्रां शिखां दक्षिणाभिनतां कृत्वा कलिकेतोश्चारान्ते नभस्त्रिभागमनुचरन् यथा यथा चोत्तरेण व्रजति तथा तथा शूलाग्रकारां शिखां दर्शयन् ब्राह्मनक्षत्रमुपसृज्यात्मना ध्रुवं ब्रह्मराशिम् सप्तर्षीन् स्पृशन् नभसः अर्धमात्रं दक्षिणमनुक्रम्यास्तं व्रजति ॥"

"Comet Chalaketu, having risen 115 years after Kaliketu in the West, with a crown of the size of a finger joint, bent southwards, following one-third of the sky, as it travels North, exhibiting a head like the tip of a trident, it moves close to the star of Brāhma (Abhijit), touches Dhruva Brahmarāśi, Saptarṣi and returns half the sky to set in the South."[33]

Sh. RN Iyengar comments; "Mention of both Brāhma-Nakśatram and Brahma-Rāśi brings in difficulties in interpretation. From the context, these should be indicating two different stations of the comet. Brahmarāśi most probably refers to constellation Lyra."

Parāśaratantra clearly refers to Brāhma-Nakśatra, Dhruva, Brahmarāśi and Saptarṣis as four different stations of the comet Chalaketu. Evidently, Brahmarāśi cannot be identified with Brāhma-Nakśatra, i.e., Abhijit. Sh. RN Iyengar has identified Brahmarāśi with the constellation Lyra but the Mahābhārata indirectly indicates the constellation Cygnus to be Brahmarāśi.

वक्रानुवक्रं कृत्वा च श्रवणे पावकप्रभः ।
ब्रह्मराशिं समावृत्य लोहिताङ्गो व्यवस्थितः ॥[34]

This śloka of the Mahabharata mentions that Mars executed a retrograde motion and entered into Śravaṇa Nakśatra and positioned in Brahmarāśi. Evidently, the Mahābhārata indicates the position of constellation Śravaṇa and constellation Brahmarāśi on the same ecliptic

longitude. Therefore, Brahmarāśi must be identified with constellation Cygnus.

Traditionally, Vedāṅga Jyotiṣa and ancient Paitāmaha Siddhānta considered Dhaniṣṭhā as the first Nakśatra of Saṁvatsara. The Mahabharata also mentions that Brahma introduced the calendar starting from Dhaniṣṭhā Nakśatra (*Dhaniṣṭhādis tadā kālo Brahmaṇā parinirmitaḥ*…). The summer solstice was at Dhaniṣṭhā Nakśatra around 14500 BCE when Brahma I had introduced the Dhaniṣṭhādi (Māgha Śukla Pratipadā in Dhaniṣṭhā) calendar. The constellation Cygnus was at North Pole around 14500 BCE. Seemingly, the station of Dhaniṣṭhā Nakśatra had been fixed considering the position of constellation Cygnus. Thus, Cygnus came to be known as Brahmarāśi. Later, star Abhijit of constellation Lyra became the North Pole star around 12000-10000 BCE. The list of Nakśatras was revised starting from Mrigaśirā (Orion), around 11300-11200 BCE, during the time of Vaivasvata Manu, and Brahma became the deity of Abhijit considering its position at North Pole. Thus, Abhijit has been generally referred to as Brāhma Nakśatra.

Historically, star Deneb of Brahmarāśi (Cygnus) was the pole star during the early Rigvedic era (14500-13500 BCE) and Abhijit was the pole star around 13000-11000 BCE. Various stars of the Śiśumāra (Draco) constellation were pole stars around 11000-1500 BCE. There was no pole star during the period 1500 BCE-500 CE. The available Parāśaratantra can be roughly dated around 1350-1130 BCE because it refers to Śiśira season from the beginning of Śraviṣṭhā to the middle of Revatī, and Vasanta season from the middle of Revatī to the end of Rohiṇī. Seemingly, Indian astronomers of the period 1500-1000 BCE have identified Brahmarāśi (Cygnus) as Dhruva. Therefore, Parāśaratantra refers to Brahmarāśi as Dhruva but clearly distinguishes it from Brāhma Nakśatra (Abhijit). Star Iota Draco of Śiśumara constellation was the pole star during the Rāmāyaṇa era (5677-5577 BCE). Therefore, Vālmiki describes the stars of Brahmarāśi and Saptarṣis as northern circumpolar stars that illuminate, revolving around Dhruva (North Pole star).

The Occurrence of Autumnal Equinox on Pausha Pūrṇimā

Sh. Nilesh Oak has also claimed that the setting of Sun was observed near Puṣya Nakśatra during Hemanta season of the Rāmāyaṇa era, but his interpretation may not be correct. He quoted the following verse.

> निवृत्ताकाशशयनाः पुष्यनीता हिमारुणाः।
> शीतवृद्धतरायामाः त्रियामा यान्ति सांप्रतम्॥ [35]

In Araṇya Kānda, while describing the Hemanta Ritu to Rāma, Lakśmaṇa states that "The nights led by the Puṣya Nakśatra (in Pauṣa month) are chilly and foggy (*Himāruṇāḥ*) and now (*Sāmpratam*, i.e., Māgha month), the length of chilly nights is prolonged by three Yāmas, i.e., nine hours". Apparently, Lakśmaṇa was referring to the longer winter nights in Hemanta season. The same has been explained by Govindarāja as "पुष्यनक्षत्रबोधितरात्रिकालपरिमाणाः हिमारुणाः हिमधूसराः रात्रयः" in his commentary on the Rāmāyaṇa. Here is the Govindarāja's commentary on the śloka:

"निवृत्तानावृतप्रदेशशयनाः पुष्यनीताः पुष्यनक्षत्रबोधितरात्रिकालपरिमाणाः हिमारुणाः हिमधूसराः शीतं वृद्धतरं यासु ताः आयामाः दैर्घ्यवत्यः त्रियामाः रात्रयः"

Evidently, there is no reference of Sun or Sunset in this śloka to establish the setting of the Sun near Puṣya Nakśatra during the Rāmāyaṇa era. If *Aruna* in "हिमारुणाः" means Sun then the use of Bahuvachana (plural tense) would be meaningless. In fact, Lakśmaṇa clearly mentions the beginning of Saṁvatsara (Māgha Krishna Pratipadā in Pūrṇimānta calendar) and the performance of Agrāyaṇa ritual during his conversation with Rāma.

अयम् स कालः संप्राप्तः प्रियो यः ते प्रियंवद।
अलंकृत इव आभाति येन संवत्सरः शुभः॥
नवाग्रयणपूजाभिरभ्यर्च्य पितृदेवताः।
कृताग्रयणकाः काले सन्तो विगतकल्मषाः॥[36]

There are numerous references of Puṣya Māsa, Puṣya Nakśatra and Puṣyayoga in Vālmiki Rāmāyaṇa in the context of Prince Rāma's coronation.[37]

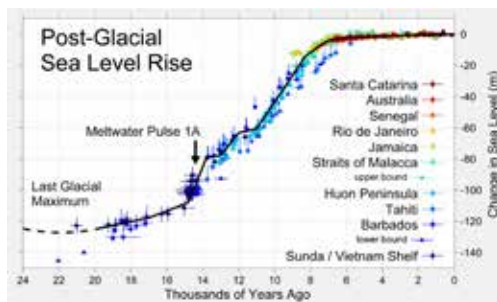
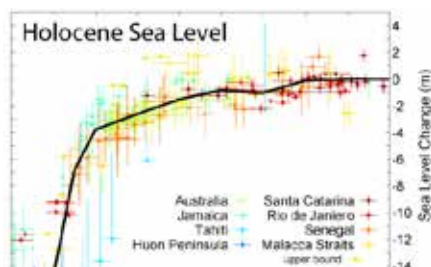
तस्मात्त्वं पुष्ययोगेन यौवराज्यमवाप्नुहि।
कामतस्त्वं प्रकृत्यैव विनीतो गुणवानसि॥
श्व एव पुष्यो भविता श्वोऽभिषेच्यस्तु मे सुतः।
रामो राजीवताम्राक्षो यौवराज्य इति प्रभुः॥
अद्य चन्द्रोभ्युपगतः पुष्यात्पूर्वं पुनर्वसू ।
श्वः पुष्ययोगं नियतं वक्ष्यन्ते दैवचिन्तकाः॥
ततः पुष्येऽभिषिञ्चस्व मनस्त्वरयतीव माम्।
श्वस्त्वाहमभिषेक्ष्यामि यौवराज्ये परंतप॥
श्वः पुष्येण जितक्रोधं यौवराज्येन राघवम्।
राजा दशरथो राममभिषेचयितानघम्॥
उदिते विमले सूर्ये पुष्ये च अभ्यागते अहनि।
अभिषेकाय रामस्य द्विज इन्द्रैः उपकल्पितम्॥
अद्य बार्हस्पतः श्रीमान् युक्तः पुष्यो न राघव।
प्रोच्यते ब्राह्मणैः प्राज्ञैः केन त्वम् असि दुर्मनाः॥
शारदाभ्रघनप्रख्यं दीप्तं मेरुगुहोपमम्।
उत्तस्थौ हर्षसंपूर्णा चन्द्रलेखेव शारदी॥
विमलग्रहनक्षत्रा शारदी द्यौरिवेन्दुना।
तं गङ्गां पुनरासाद्य वसन्तं मुनिसंनिधौ।
अविघ्नं पुष्ययोगेन श्वो रामं द्रष्टुमर्हसि॥

Most probably, Puṣyayoga indicates the occurrence of autumnal equinox on Pauṣa Pūrṇimā and the Pūrṇimānta Vedic calendar was in popular use during the Rāmāyaṇa era in Ayodhyā-Mithilā region.

Internal Evidence: the Upper Limit and the Lower Limit on Estimating of the Date of the Rāmāyaṇa

As explained above, there is no absolute internal or external evidence that establishes a particular date of the Rāmāyaṇa. We also have no other option but to reject certain interpolated verses. Since pinpointing the

interpolated verses cannot be arbitrary, it is pertinent to establish an upper limit and lower limit on estimating of the date of the Rāmāyaṇa.

1. The oceanographic studies may certainly lead to establish an upper limit on estimating of the date of the Rāmāyaṇa. According to the studies of post-glacial sea level rise, Sri Lanka had been connected with India through land route at least up to 6200 BCE.

The last pulse "Melt Water Pulse 1C" (MWP 1C) took place around 6200-5600 BCE, which produced a rise of 6.5 meters in less than 140 years.[38] Evidently, the area of Rāmasetu was submerged by sea during MWP 1C. Currently, the area of Rāmasetu is only one to ten meters deep in places. Nala of the Rāmāyaṇa era might have raised the ground level maximum up to two meters. Considering the area was two meters deep in some places before the construction of Rāmasetu, the sea level of some places between Dhanushkodi and Talaimanar must be at least fourteen meters below the current level. Since the Rāmasetu was almost walkable around 900 CE, Nala might have built the setu at the end of MWP 1C. Therefore, the upper limit on estimating the date of the Rāmāyaṇa cannot be established beyond 6000 BCE and the lower limit cannot be established after 5000 BCE.

2. Kishkindha Kānda refers to Sri Lanka as an island, which clearly indicates that the land route between Dhanushkodi and Talaimanar was submerged by sea and the submerged area was extended up to 100 Yojanas at least during the time of high tide (इतो द्वीपे समुद्रस्य संपूर्णे शत योजने। तस्मिन् लंका पुरी रम्या निर्मिता विश्वकर्मणा ॥).[39] According to Yuddha Kānda of the Rāmāyaṇa, Nala built Setubandha or Nalasetu having the width of ten Yojanas and the length of 100 Yojanas. Kishkindha Kānda also mentions that Pāriyātra Parvat has the height of 100 Yojanas. It appears that the measurement of Yojana of the Rāmāyaṇa era was 100 times smaller than that of the Mahābhārata era. The length of Yojana had been increased to 100 times by the Mahābhārata era. This is the reason why Purāṇas say that Meru has the height of 100 Yojanas whereas Āryabhaṭa says that the height is only one Yojana. Aṅgula and Danḍa were the standard units of measurement since the Vedic period. One Aṅgula was equal to 1.763 centimeters. One Danḍa was equal to ninety-six Aṅgulas (169.25 centimeters). Most probably, Yojana of the Rāmāyaṇa era was equal to 100 Danḍas (169.25 meters). Thus, Nalasetu had roughly the length of 16.92 km and the width of 1.69 km. This Setubandha was strategically important to ensure smooth transportation of the army, regular food supply and logistics during the war between Rāma and Rāvaṇa. Evidently, Sri Lanka was an island and the submerged area between Dhanushkodi and Talaimanar was extended up to 16.90 km during the Rāmāyaṇa era. Today, the submerged area between Dhanushkodi to Talaimanar is extended up to 30 miles or 48 km. Based on the studies on post-glacial sea level rise, we can fix the upper limit of the Rāmāyaṇa era around 6500 BCE and the lower limit around 5000 BCE. Interestingly, the Greek measurement unit "Stade" also had similar length of the Yojana of the Rāmāyaṇa era. Herodotus mentions that the Stadion was equal to 600 ft. Most probably, the Yavanas (Ionians) of post-Rāmāyaṇa era had migrated from Afghanistan to Greece and introduced the measurement unit of Yojana that came to be known as "Stadion".

   Vālmiki Rāmāyaṇa also mentions that the length of Ayodhyā city was twelve Yojanas and the breadth was three Yojanas. Considering

the Yojana unit of 169.25 meters, Ayodhyā city had a length of 2031 meters (two km) and the breadth of 507.75 meters (0.5 km) [आयता दश च द्वे च योजनानि महापुरी। श्रीमती त्रीणि विस्तीर्णा सुविभक्ता महा पथा ।।].[40] It may also be noted that none of the Saṁhitā, Brāhmaṇa and Upaniṣad texts mentioned the unit of Yojana. Ṣadviṁśa Brāhmaṇa referred to the unit of Aśvīna. The word 'Yojana' was used in Sūtra texts for the first time. Evidently, the Rāmāyaṇa cannot be dated before the era of Saṁhitās, Brāhmaṇas and Upaniṣads.

3. The Rāmāyaṇa refers Taittirīyas (आचार्यः तैत्तिरीयाणाम् अभिरूपः च वेदवित् ।।).[41] Tittiris were the disciples of Vaiśampāyana who was the pupil of Veda Vyāsa, and lived around 11100 BCE.
4. The Rāmāyaṇa also refers to Dhanurveda and Vedāṅgas (धनुर्वेदविदां श्रेष्ठो ।, सम्यग्विद्याव्रतस्नातो यथावत्साङ्गवेदवित् ।, धनुर्वेदे च वेदे च वेदाङ्गेषु च निष्ठितः ।।).[42] I have already explained the dates of Vedāṅgas and Upavedas. Therefore, the Rāmāyaṇa cannot be dated before 6700 BCE.
5. Rāmāyaṇa refers to Kśatraveda and Brahmaveda (क्षत्रवेदविदां श्रेष्ठो ब्रह्मवेदविदामपि। ब्रह्मपुत्रो वसिष्ठो मामेवं वदतु देवताः ।।).[43] Evidently, Kśatraveda is Dhanurveda. Nakśatrakalpa of Atharvaveda refers to Brahmaveda as Atharvaveda. Some commentators of the Rāmāyaṇa have interpreted Kśatraveda as Atharvaveda. In ancient times, Atharvaveda is also known as Brahmaveda, Bhiṣagveda and Āṅgirasaveda.
6. In Kishkindha Kānda, Rāma says that Hanuman might have read Rigveda, Yajurveda, Sāmaveda and entire Vyākaraṇa. Vyākaraṇa was not only evolved to an advanced stage but also many Vyākaraṇa śāstras existed during the Rāmāyaṇa era (नानृग्वेद विनीतस्य नायजुर्वेद धारिणः। नासामवेदविदुषः शक्यम् एवम् विभाषितुम्।। नूनम् व्याकरणम् कृत्स्नम् अनेन बहुधा श्रुतम्। बहु व्याहरता अनेन न किंचित् अपशब्दितम।।).[44] Uttara Kānda refers to the subject of advanced grammar as Nava Vyākaraṇa (सोऽयं नवव्याकरणार्थवेत्ता).
7. Rāmāyaṇa indicates that Daśaratha lived for many thousands of years. Dilīpa thrived for 30000 years. Jatāyu lived for 60000 years. Rāma reigned for 11000 years. In Uttara Kānda, Vālmiki himself says

that he was the tenth son of Prachetas and did penance for 10000 years. Evidently, all these verses have been added by the updaters after the Mahābhārata era. [अनेकवर्षसाहस्रो वृद्धस्त्वमसि पार्थिव।, प्राप्य वर्षसहस्राणि बहू न्यायूंषि जीवतः॥, दिलीपः तु महातेजा यज्ञैः बहुभिः इष्टवान्। त्रिशत् वर्ष सहस्राणि राजा राज्यम् अकारयत्॥, षष्टिवर्षसहस्राणि जातस्य मम रावण। पितृ पैतामहम् राज्यम् यथावत् अनुतिष्ठतः॥, दशवर्षसहस्राणि दशवर्ष शतानि च। रामो राज्यम् उपासित्वा ब्रह्म लोकम् प्रयास्यति॥].[45] Evidently, these ślokas were interpolated after the introduction of the greater duration of Chaturyuga (4320000 years).

8. Rāmāyaṇa refers to Mātaṅga Muni, the teacher of Śabarī. He was probably the author of Brihaddeśī. Mātaṅga Muni quotes Bharata's Nātyaśāstra, which was written in the Tretā Yuga. Vālmiki has also used a vocabulary similar to that of Bharata's Nātyaśāstra. Therefore, Bharata Muni and Mātaṅga Muni flourished before the lifetime of Rāma.
9. The Rāmāyaṇa refers to Kavāṭapuram as the capital of Pāndya kings. The Sangam literature relates that Kavātapuram was the capital of Pāndya kings during the period of second Sangam era (6826-3126 BCE).

External Evidence

Manu Smriti (5000 BCE) is the earliest text that indirectly refers to the Rāmāyaṇa. It refers to Licchavis who were the descendants of Rāma. Śukra Nīti (after 5000 BCE) also refers to the Rāmāyaṇa. Later texts like Kātyāyana Smriti and Garga Saṁhitā of the pre-Mahābhārata era also have the references of the Rāmāyaṇa. Evidently, none of the texts written in Vedic or Post-Vedic Sanskrit language and the Sūtra texts of Vedāṅgas and Upāṅgas refer to the Rāmāyaṇa. Thus, the external evidence also validates the upper and lower limits of the Rāmāyaṇa timelines to be around 6000-5000 BCE.

Kapis and Rikśas of the Rāmāyaṇa era

Hanuman, Sugriva, Vāli, Aṅgada, Nala and Nīla have been mentioned as Kapis in the Rāmāyaṇa. Jāmbavant relates the legend of the birth of Hanuman in Kishkindha Kānda.[46] Hanuman was the son of Kesarī. His mother was Apsaras Puñjikasthalā, also known as Añjanā. She was the

daughter of Kuñjara, a king of Kapis or Vānaras. Enamoured by her beauty, Vāyu II, a descendant of Ādityas established a relationship with Añjanā. Thus, Hanuman was born to Añjanā and Vāyu. Therefore, Hanuman was "Aurasa" of Vāyu, or Pavana, and "Kśetraja" of Kesarī. Jāmbavant indicates that Kesarī was a contemporary of Garutman or Garuda, son of Ariṣṭanemi (Rishi Kaśyapa Prajāpati) and Vinatā. Thus, Hanuman I might have flourished around 11200-11100 BCE whereas Hanuman II was the contemporary of the Rāmāyaṇa era. This is the reason why Jāmbavant relates the historical legend of Hanuman I's birth to Hanuman II. Śatapatha Brāhmaṇa also refers to Puñjikasthalā.

Maharshi Kapi of Rigveda era was the descendant of Āṅgirasa gotra and the founder of the Pravara gotra of Kapi. The word 'Kapi' was never used for a monkey in Cḥandas Sanskrit (Vedic Sanskrit). Evidently, Kapi became synonymous with Vānara, or monkey, in Bhāṣā Sanskrit (Laukika Sanskrit). Rigvedic Rishi Vriṣākapi was the son of Indra. Seemingly, Añjanā's father Kuñjara was the king of the community of Kapis, the descendants of Rishi Kapi and Kesarī, the father of Hanuman also belonged to the community of Kapis. This is how a royal community of Kapis came into existence in Kishkindhā. The Kings of Kapis had a monkey image on their flag as indicated in Jain sources. Jain Rāmāyaṇa clearly describes Hanuman, Sugriva and all as human beings.

According to Purāṇas, Jāmbavān I was the son of Brahma and the younger brother of Himavān. Evidently, he was the contemporary of Śiva and lived around 11250 BCE. He became the king of the community of Rikśas (the progeny of Rikśa). The cave of Jāmbavān was built by Maya as recorded in the Rāmāyaṇa. Jāmbavān II (11150 BCE) was the contemporary of Devakīputra Krishna and married off his daughter Jāmbavatī to him. Jāmbavān III of the Rāmāyaṇa era was also a king of Rikśas. Seemingly, his mother belonged to the community of Kapis. Therefore, Jāmbavān is also referred to as "Kapiśreṣṭha" in the Rāmāyaṇa. Traditionally, Kapis and Rikśas had a close relationship since ancient times. Gradually, the words "Kapi" and "Rikśa" became synonymous with monkey and bear in Laukika Sanskrit. The later updaters of the Rāmāyaṇa described Kapi as a monkey, and Jāmbavān and Rikśa as a bear to induce

"Adbhuta Rasa" and exaggerated the description of the events related to Kapis and Rikśas. Similarly, Jatāyu and Sampāti were the descendants of Garuda, son of Rishi Kaśyapa and not vultures.

Puṣpaka Vimāna

The ancestors of Rāvaṇa had politically dominated in South India and Sri Lanka during pre-Rāmāyaṇa era. Vālmiki Rāmāyaṇa informs us that Rāvaṇa and Vaiśravaṇa were the sons of Viśravas and Kaikeśi. Seemingly, Vaiśravaṇa became the king of Sri Lanka and Rāvaṇa inherited the kingdom of his father in South India. The golden city of Lankapuri was designed and built by Viśvakarmā. Lankāpurī was the most beautiful city of the world during the Rāmāyaṇa era. Rāvaṇa forcibly took over the city of Lankāpurī and Puṣpaka Vimāna from his brother. Vaiśravaṇa had no other option but to emigrate northwards and became the King of Alakāpurī of Yakśas.

Viśvakarmā was the earliest civil engineer of the Rigvedic period. His descendants were also known as Viśvakarmā. They pursued the profession of their forefathers. Viśvakarmā, the contemporary of Vaiśravaṇa and Rāvaṇa, made a flying chariot named as Puṣpaka Vimāna. Interestingly, King Śālva of Saubha (11150-11050 BCE) was the first to use Vimāna when he attacked the city of Dvāravatī of Devakīputra Krishna.[47] In all probability, Vimāna or Puṣpaka Vimāna was like a hot air balloon carrying a specially designed chariot. Rāma, along with Sītā, Lakśmaṇa and Hanuman, boarded the Puṣpaka Vimāna and returned to Ayodhyā from Sri Lanka in just eighteen days. The Rāmāyaṇa describes Puṣpaka Vimāna resembling a summit of mount Meru (*tam Meruśikharākāram nirmitam Viśvakarmaṇā*) that indicates the size of a huge air balloon. The description of the take-off of Puṣpaka Vimāna in the Rāmāyaṇa as "*Utpapāta Vihāyasam*" also indicates the ride of a hot air balloon. Interestingly, selected natural silk with appropriate coatings can be excellent balloon material. Viśvakarmā of the Rāmāyaṇa era might have used natural silk to make the fabric of hot air balloon. According to Zoroastrian history, the Kayanian King Kai Khusrow also travelled in an aerial vehicle (hot air balloon) from Iran to China (Xinxiang).

Trikūta Śikhra, the Location of Lankāpurī of Rāvaṇa

Sundara Kānda of the Rāmāyaṇa tells us that the city of Lankāpurī was located on the peak of Trikūṭa Parvata (त्रिकूटशिखरे लङ्कां स्थितां स्वस्थो ददर्श ह ।).[48] Interestingly, Al Beruni says: "According to Hindus, Lanka is the castle of the demons. It is thirty Yojanas above the earth... It is on account of Lanka and the island of Vadavāmukha (Volcano) that the Hindus consider the south as foreboding evil."

The Mountain "Pidurutalagala" is the highest peak of the central hill country of Sri Lanka. Vadavāmukha or Volcano is also located in these hills of Sri Lanka. In all probability, Trikūṭa śikhara was the peak of Pidurutalagala. Its height is 2524 meters. Viśvakarmā built the fortress of Lanka. Later, Rākśasas or Asuras occupied this city. I have already explained that the length of Yojana was 165 meters during the Rāmāyaṇa era. Thus, Lanka city was located thirty Yojanas, i.e., 4950 meters above the earth. Seemingly, the road to Lanka city from foothills to peak had a length of five km. The Rāmāyaṇa indicates that the palace of Rāvaṇa had the length of one Yojana (165 meters) and the breadth of half yojana (82.5 meters) [अर्धयोजनविस्तीर्णम् आयतं योजनं हि तत् । भवनं राक्षसेन्द्रस्य बहुप्रासाद संकुलम ।।].[49]

The Date of Vasiṣṭha Rāmāyaṇa or Yoga Vāsiṣṭha (5677-5577 BCE)

Vālmiki's Yoga Vāsiṣṭha or Vasiṣṭha Rāmāyaṇa was the earliest exposition of Vedānta philosophy. The earliest reference of Vasiṣṭha philosophy is found in Anuśāsana Parva of the Mahābhārata.[50] Vasiṣṭha Samhita's Yoga Kānda is available today. Seemingly, Vasiṣṭha of the Rāmāyaṇa era compiled Vasiṣṭha Saṁhitā and imparted philosophical knowledge to Rāma. Vālmiki had witnessed the philosophical discussions between Vasiṣṭha and Rāma. He authored Vasiṣṭha Rāmāyaṇa or Yoga Vāsiṣṭha and gave it to his disciple Bhāradwāja. Many scholars have attempted to date Yoga Vāsiṣṭha based on the internal evidence. Some scholars claim that Yoga Vāsiṣṭha influenced from the Vijñanavāda and Mādhyamaka schools of Buddhism. Taittirīya Upaniṣad mentions Vijñāna as Brahma (Vijñānam Brahma). Upaniṣads refer to *Parā* (transcendental consciousness), *Paśyantī* (intellectual consciousness), *Madhyamā* (mental consciousness) and *Vaikharī* (physical consciousness). The ideas

of Vijñāna and Madhymā were integral part of Upanishadic philosophy. The schools of Buddhist philosophy have also evolved under the influence of Upanishadic philosophy.

Some scholars pointed out that a śloka of Yoga Vāsiṣṭha is also identical with a verse in Kālidāsa's *Kumārasambhavam*.[51] Therefore, Yoga Vāsiṣṭha was written after Kālidāsa. But it is also possible that Kālidāsa borrowed it from Yoga Vāsiṣṭha. Seemingly, Yoga Vāsiṣṭha was enlarged and recompiled in later times but its antiquity cannot be denied based on some verses added or interpolated in the later period. Therefore, the earliest version of Yoga Vāsiṣṭha was written by Vālmiki around 5600 BCE. The concise versions of Yoga Vāsiṣṭha, like Mokśopāya and Laghu Yogavāsiṣṭha, were written by Kashmiri scholars. Mokśopāya refers to Kashmir King Yaśaskara and his minister Narasimha. Laghu Yogavāsiṣṭha was written by Abhinanda.

Adbhuta, Ānanda, Agastya and Ādhyātma Rāmāyaṇas

According to tradition, Vālmiki also authored Adbhuta Rāmāyaṇa and Ānanda Rāmāyaṇa. Seemingly, Vālmiki authored only Vālmiki Rāmāyaṇa and Yoga Vāsiṣṭha. Either his descendants or the later poets of Dvāpara Yuga wrote Adbhuta and Ānanda Rāmāyaṇas based on Vālmiki Rāmāyaṇa. Since these Rāmāyaṇas were written based on Vālmiki Rāmāyaṇa, therefore, the authorship of these Rāmāyaṇas might have been attributed to Vālmiki. The naming of Adbhuta and Ānanda indicates the poetic and dramatic presentation of the Rāmāyaṇa to portray Adbhuta Rasa and Ānanda Rasa. Numerous Sanskrit poets of Dvāpara Yuga and Kaliyuga had attempted to present the popular story of the Rāmāyaṇa in their poetry and Nātakas. Seemingly, Agastya of Dvāpara Yuga also authored a Rāmāyaṇa that is known as "Agastya Rāmāyaṇa".

Probably, Vyāsa of the Mahābhārata era wrote Ādhyātma Rāmāyaṇa because it is an extract from the Brahmāṇḍa Purāṇa. The concept of the incarnations of Vishnu was evolving during the Mahābhārata era and Vyāsa has propounded Rāma as an incarnation of Vishnu. Since the story of the Rāmāyaṇa had been retold poetically and dramatically to many generations, numerous mythological narratives of the Rāmāyaṇa

like Rāma as an incarnation of Vishnu, Sītā as the daughter of Bhūdevi (earth), Vāli, Sugriva and Hanuman of the Kapi community as monkeys, Jāmbavān as the king of Rikśas (King of bears) and Jaṭāyu, Sampāti as vultures, and so on, have evolved.

The Legend of Hanumad Rāmāyaṇa

According to legends, Hanuman was the first who briefly wrote the account of Rāma's victory over Rāvaṇa on clay tablets. He might have recited it to Sri Rāma. But Sri Rāma said to Hanuman: "I have just done my righteous duty. There is nothing extraordinary to write laboriously about me." Disappointed Hanuman threw these clay tablets near the sea. Interestingly, Kālidāsa found one clay tablet written in an extinct script near sea. He hung it in a public place so that someone having the knowledge of this extinct script may decipher it. Finally, Kālidāsa himself deciphered it and found only one pāda of a śloka written by Hanuman. Thus, Kālidāsa was the first epigraphist of the world. Most probably, Kālidāsa I, the author of *Meghadūtam*, found the clay tablet of Hanuman near Rameshvaram. He lived around 780-709 BCE.

The Khotanese Rāmāyaṇa

According to Khotanese tradition, Daśaratha was also known as Sahasrabāhu who fought with Paraśurāma and got killed. Evidently, Kārtavīryārjuna was referred to as Daśaratha and Sahasrabāhu. Seemingly, Kārtavīryārjuna had two more sons named Rāma and Lakṣmaṇa who were saved by a queen. Thus, Rāma and Lakśmaṇa, sons of Sahasrabāhu lived around 11180 BCE. They had killed Paraśurāma in revenge. Rāvaṇa I, a junior contemporary of Kārtavīryārjuna, had a daughter named Sītā. Adbhuta Rāmāyaṇa also refers to Sītā as a daughter of Rāvaṇa I. It seems later updaters have mixed up the stories of Sītā I (11180 BCE), daughter of Rāvaṇa I, and Sītā II (5667-5600 BCE), daughter of the Mithila king.

6

Dvāpara Yuga (5577-3176 BCE) and the Epoch of Mahābhārata War (3162 BCE)

Many scholars have attempted to arrive at the date of the Mahābhārata War as starting from 5561 BCE to 1100 BCE, based on internal astronomical evidence. But they have ignored the epigraphic, literary and traditional evidence in the last 100 years of Indological research. Modern historians have either viewed the Mahābhārata as a fiction, or roughly fixed the date of the Mahābhārata War around 1000-800 BCE, ignoring internal, epigraphic, literary and traditional evidence. Thus, a divergence of opinion still exists today. The real problem is that the historians and Indologists have neither verified nor falsified the traditional date of the Mahābhārata recorded in epigraphic and literary sources.

I would insist that we need to correct our methodology. There is an unbroken and continuous chronological history starting from the Mahābhārata War to the post-Gupta period recorded in Purāṇas, inscriptions and other literary sources. It would lead to numerous chronological inconsistencies if we ignore the traditional evidence. Therefore, it is extremely important to arrive at the traditional date of the Mahābhārata War validated by the sheet anchors of Indian chronology. Thereafter, we must critically examine the internal evidence to arrive at the accurate dates of the events of the Mahābhārata era.

The Date of 3138 BCE

During the second half of the 19th century, some scholars have propounded that the Mahābhārata War occurred in 3138 BCE, which became very

popular though it is not supported by any epigraphic or literary evidence. The Mahābhārata records that Sri Krishna died in the 36th year and Bhāgavata, Vishnu and Brahma Purāṇas mention that the epoch of Kaliyuga commenced from the death of Sri Krishna. Considering the epoch of Kaliyuga in 3102 BCE, the date of the Mahābhārata War has been fixed around 3138 BCE. Evidently, the date of 3138 BCE is based on the Kaliyuga epoch of 3102 BCE.

In fact, the epoch of 3102 BCE became popular only after the 2nd century BCE when Indians started following Sūrya Siddhānta. The earliest epigraphic evidence indicates that the epoch of Kaliyuga was in use in Andhra around the Kali year 2628.[1] King Śālivāhana introduced an epoch when he took control over western India. The Śaka King Caṣṭana founded an epoch of 583 BCE in commemoration of his coronation at Ujjain which came to be popularly known as the Śaka era.[2] The Śakas followed Yavana Siddhānta and introduced "Yavanajātaka of Sphujidhvaja" in India. Yavana Siddhānta clearly claims its origin from Sūrya Siddhānta. Though these Siddhāntas were known to Indian astronomers, the royal patronage of these Siddhāntas by western Śaka Kśatrapas of Ujjain led to a brainstorming in Indian astronomy. In this process of brainstorming, Indian astronomers got gradually attracted to the accuracy of Sūrya Siddhānta. It may be noted that Lāṭadeva's Sūrya Siddhānta and Yavana Siddhānta both acknowledge "Mayāsura" to be the originator of Sūrya Siddhānta. Thus, Indians started following Sūrya Siddhānta from the 5th century BCE onwards. Gradually, the epoch of 3102 BCE became popular as the epoch of Kaliyuga. Lāṭadeva's Sūrya Siddhānta clearly mentions that the Kaliyuga epoch of 3102 BCE commenced on the Chaitra Śukla Pratipadā and a great conjunction of planets, Sun and Moon took place in Mīna Rāśi on the same date. Therefore, the epoch of 3102 BCE has nothing to do with the death of Sri Krishna.

Prior to the 2nd century BCE, Indians commonly used the epoch of the Yudhiṣṭhira era, which was identical to the epoch of the Mahābhārata War. Udyoga Parva of the Mahābhārata clearly indicates that the epoch of Kaliyuga had commenced before the Mahābhārata War (कौमुदे मासि रेवत्यां शरदन्ते हिमागमे, स्फीतसस्यमुखे काले कलेः सत्त्ववतां वरः ||[3], यस्मिन् यत्नः कृतो

ऽस्माभिः स नो हीनः प्रयत्नतः, अकृते तु प्रयत्ने ऽस्मान् उपावृत्तः कलिर्महान् ॥[4]). Thus, the epochs of the Yudhiṣṭhira era and the Mahābhārata War have been identical in ancient times and the epoch of Kaliyuga commenced before the Mahābhārata War. Later, the epoch of Kaliyuga was assumed to be identical to the epoch of the Mahābhārata War and the epoch of the Yudhiṣṭhira era. Interestingly, an inscription of medieval era refers to the epoch of 3102 BCE as the epoch of the Yudhiṣṭhira era.[5]

Āryabhaṭa also tells us that the fourth Yugapāda (Kaliyuga) commenced before the Mahābhārata War.[6] Thus, there were four different views about the beginning of Kaliyuga.

1. According to Āryabhaṭa, the fourth Yugapāda or Kaliyuga began in 3173-3172 BCE before the Mahābhārata War.
2. Mahabharata indicates that the epoch of Kaliyuga had already commenced before the year of the Mahābhārata War.
2. Bhāgavata Purāṇa mentions that the epoch of Kaliyuga commenced from the date of Sri Krishna's death.
3. According to Lāṭadeva's Sūrya Siddhānta, the epoch of Kaliyuga commenced from the conjunction of Sun, Moon and Planets in Revatī Nakśatra, Mīna Rāśi in 3102 BCE.

Kālidāsa was the first who referred to the epoch of 3102 BCE in his *Jyotirvidābharaṇam*.[7] He also indicated that the epoch of the Yudhiṣṭhira era was abandoned in the 3044th year.[8] Evidently, the date of 3138 BCE has been arrived at based on the epoch of 3102 BCE, which came into popular use only around the 2nd and 1st centuries BCE. Therefore, the date of 3138 BCE cannot qualify to be the traditional date of the Mahābhārata War.

Traditional Epoch of the Mahābhārata War and the Yudhiṣṭhira Era

Varāhamihira quotes from the treatise of Vriddha Garga and mentions that Saptarṣis were in Maghā Nakśatra around 3176-3076 BCE.[9] He also records that total 2526 years elapsed up to the epoch of the Śaka-kāla. It unambiguously indicates the date of 3176 BCE when Yudhiṣṭhira was on the throne of Indraprastha. Ancient Indians traditionally referred to the Saptarṣi calendar for recording the chronology of historical events. I have already explained that the Saptarṣi calendar was introduced around 6777

BCE in the beginning of Tretā Yuga. It was hypothetically assumed the position of Saptarṣis in Aśvinī Nakśatra around 6777-6677 BCE. Thus, Saptarṣis were in Maghā around 3176-3076 BCE. Purāṇas also clearly tell us that Saptarṣis were in Maghā around 3176-3076 BCE. A Vākāṭaka inscription of King Devasena mentions that Saptarṣis were in Uttara Phālgunī around Śaka 380 (203 BCE).[10] Evidently, Indians followed the forward motion of the Saptarṣis. If the Saptarṣis were in Uttara Phālgunī around 276-176 BCE, then undoubtedly the Saptarṣis were in Maghā around 3176-3076 BCE.

Kaliyuga Rājavrittānta also states:

यदा युधिष्ठिरो राजा शक्रप्रस्थे प्रतिष्ठितः ।
तदा सप्तर्षयः प्रापुर्मघाः पितृहिते रताः ।।
पञ्चसप्ततिवर्षाणि प्राक्कलेः सप्त ते द्विजाः ।
मघास्वासन् महाराजे शासत्युर्वीम् युधिष्ठिरे ।।

"When Yudhiṣṭhira was crowned King at Śakraprastha, i.e. Indraprastha, the constellation of the Great Bear or the Saptarṣis entered the region of the star Maghā. Seventy-five years before the commencement of the Kaliyuga, the Seven Rishis crossed over into Maghā star when Yudhiṣṭhira was ruling over the Earth."

Kaliyuga Rājavrittānta was written when the epoch of Kaliyuga (3102 BCE) of Sūrya Siddhānta was well established but the traditional date of Yudhiṣṭhira's reign in Indraprastha was known to the scholars of Purāṇas. An ancient manuscript describing the date wise chronology of all the kings of Hastinapur was published in the fortnightly magazine of Nathdwara (Rajasthan) called "Hariśchandra Chandrikā and Mohan Chandrikā" in 1872. By adding the total number of years from the reign of Yudhiṣṭhira in Indraprastha to the end of the reign of Vikramāditya II, it comes to 3178 years.

Though the movement of the Great Bear (Saptarṣis) from one Nakśatra to another in a period of 100 years is not an astronomical fact, ancient Indians followed a Saptarṣi cycle of 2700 years since 6777 BCE. This ancient tradition unambiguously tells us that the Saptarṣis entered into Maghā Nakśatra in 3176 BCE when Yudhiṣṭhira was on the throne of Indraprastha. Therefore, ancient tradition clearly indicates that

Yudhiṣṭhira performed Rājasūya Yajña and ascended to the throne of Indraprastha before 3176 BCE.

A śloka from a lost text named "*Kutūhalamañjarī*" informs us that Varāhamihira was born in the 8th *tithi* of the bright half of Chaitra month, in Jaya Saṁvatsara and in the year 3042 of the Yudhiṣṭhira era. Seemingly, *Kutūhalamañjari* refers to the epoch of 3188 BCE as the year of Yudhiṣṭhira's coronation in Indraprastha. Thus, the traditional chronology of the historical events of the Mahābhārata can be arrived as given below:

		In CE
1.	Rājasūya Yajña and Yudhiṣṭhira's coronation in Indraprastha.	3188 BCE
2.	According to the Saptarṣi calendar, the Saptarṣis entered into Maghā Nakśatra.	3176 BCE
3.	Pāndavas lost their kingdom in "Akśadyūta" and proceeded for Vanavāsa.	3175 BCE
4.	Vanavāsa of 12 years.	3175-3163 BCE
5.	Ajñātavāsa of one year.	3163-3162 BCE
6.	The year of the Mahābhārata War.	3162-3161 BCE
7.	The first day of the Mahābhārata War (Kārttika Amāvāsyā in Jyeṣṭha Nakśatra).	25th Oct 3162 BCE
8.	The fall of Bhishma (10th day of the war).	3rd Nov 3162 BCE
9.	The Mahābhārata War lasted for 18 days.	25th Oct 3162 BCE to 11th Nov 3162 BCE
10.	The epoch of Yudhiṣṭhira era or the coronation of Yudhiṣṭhira in Hastinapur (on the 28th day after Mahābhārata war and Pauṣa Pūrṇimā).	8th Dec 3162 BCE
11.	The date of Bhishma Nirvāṇa (Māgha Śukla Aṣṭamī, Rohiṇī Nakśatra and the 98th day from the date of the Mahābhārata War).	30th Jan 3161 BCE
12.	***Bhishma Pañchakam:*** Bhishma was probably in Samādhi state for five days from Māgha Śukla Aṣṭamī to Māgha Śukla Dvādaśī.	30th Jan 3161 BCE to 3rd Feb 3161 BCE

Aihole Inscription and the Date of the Mahābhārata War (3162 BCE)

Epigraphic evidence also supports the date of the Mahābhārata War given in the literary sources. The Nidhanpur copper plates of Bhāskaravarman (5th century BCE) record that the lineage of Naraka ruled for 3000 years in Pragjyotiṣa and thereafter, Puṣyavarman ascended the throne in 7th century BCE.[11] Bhagadatta, the descendant of Naraka Dynasty, participated in the Mahābhārata War and supported Pāndavas. Bhāskaravarman, the author of Nidhanpur plates, was the descendant of Bhagadatta and reigned over Kāmarūpa (Assam and northern parts of Bangladesh) in the 5th century BCE. Thus, the Nidhanpur plates indirectly indicate the traditional date of the Mahābhārata to be around the 32nd century BCE.

The Aihole inscription of the early Chālukya King Pulakeśin II dated in Śaka 556 elapsed (27 BCE) explicitly mentions that 30 + 3000 + 100 + 5 = 3135 years elapsed up to 27 BCE from the year of the Mahābhārata War; that means 3135 + 27 = 3162 BCE was the year of the Mahābhārata War.[12] Western historians distorted the statement of Aihole inscription *"Sahābda- śata-yukteṣu"* into *"Saptābda- śata-yukteṣu"* and calculated that 30 + 3000 + 700 + 5 = 3735 years elapsed and not 3135 years. Considering the epoch of the Śakānta era (78 CE) as the epoch of the Śaka era (583 BCE), historians have arrived the year 3102 BCE [3735-(556 +78) = 3102] and concluded that Ravikirti, the author of the Aihole inscription, referred to the epoch of the Kaliyuga as the epoch of the Mahābhārata War. None of the Indian literary sources refer to the epochal year of Kaliyuga as the year of the Mahābhārata War.

Therefore, the reading *"Sahābda-śata-yukteṣu"* must be the correct version. Thus, the Aihole inscription tells us that 3135 years elapsed from *"Bhāratāt Āhavāt"*, meaning "the war of Bharatas", i.e., the Mahābhārata War. Thus, the year of the Mahābhārata War was 3162 BCE as recorded in the Aihole inscription.

The Epoch of the Yudhiṣṭhira Era (3162 BCE)

As explained earlier, Indians also referred to the epoch of the Mahābhārata War (3162 BCE) as the epoch of the Yudhiṣṭhira era in ancient times. The same epoch was also presumed as the beginning of Kaliyuga, but when Sūrya Siddhānta gained popularity after the 2nd century BCE, Indians

gradually forgot the epoch of the Yudhiṣṭhira era and regularly referred to the epoch of 3102 BCE as the epoch of Kaliyuga.

The Date of Sri Krishna Nirvāṇa (3126 BCE)

According to Bhāgavata tradition, Sri Krishna died in the 36th year after the Mahābhārata War. The Mahābhārata also unambiguously records the death of Sri Krishna in the 36th year from the epoch of the Mahābhārata War. Therefore, Sri Krishna attained nirvāṇa in 3126 BCE.

The Date of Coronation of Parīkśit (3126 BCE)

It is stated in Musala Parva that Pāndavas coronated Parīkśit in the 36th year under the tutelage of Kripāchārya. Parīkśit was 35 years old when he ascended to the throne.

The chronology of legendary personalities of the Mahābhārata era:

		In CE
1.	**Śāntanu** married Gangā and Satyavatī, daughter of the royal family of Matsya janapada.	3280-3242 BCE
2.	**Bhishma** was the son of Gangā and Śāntanu. He was probably born around 3260 BCE and died on 29th Jan 3161 BCE. He was 98 years old during the Mahābhārata War (3162 BCE).	3260-3161 BCE
3.	**Vyāsa** was the son of Parāśara and Satyavatī. Śāntanu married Satyavatī around 3259 BCE. Most probably, Vyāsa was also born in the same year of the birth of Bhishma. Vyāsa might have lived for 135 years. He was probably still alive when Sri Krishna died in 3126 BCE.	3260-3125 BCE
4.	**Chitrāṅgada and Vichitravīrya** were the sons of Śāntanu and Satyavatī. Most probably, Chitrāṅgada was born in 3258 BCE and Vichitravīrya was born in 3257 BCE. Chitrāṅgada was killed in a war. Vichitravīrya succeeded his father around 3242 BCE. He married Ambikā and Ambālikā.	3257-3230 BCE
5.	**Dhritarāṣṭra** was the son of Ambikā and Vyāsa.	3240-3144 BCE.
6.	**Pāndu** was the son of Ambālikā and Vyāsa. He died when Yudhiṣṭhira was ~18 years old.	3240-3204 BCE

7.	**Vidura** was the son of a maid and Vyāsa.	3240-3140 BCE
8.	**Karṇa** was born to Kunti before her marriage. He was raised by a Sūta.	3225-3162 BCE
9.	**Yudhiṣṭhira** was the son of Pāndu and Kunti. He was born around 3223 BCE. He was coronated in Hastinapur on 8th Dec 3162 BCE. He founded the epoch of Yudhiṣṭhira era (3162-3161 BCE).	3223-3124 BCE
10.	**Sri Krishna** was probably born in 3223 BCE and died in 3126 BCE, 36 years after the Mahābhārata War (3162 BCE).	3223-3126 BCE
11.	**Bhima,** son of Pāndu and Kunti was born around 3222 BCE.	3222-3124 BCE
12.	**Arjuna,** son of Pāndu and Kunti was born around 3220 BCE.	3220-3124 BCE
13.	**Nakula,** son of Pāndu and Mādrī was born around 3218 BCE.	3218-3124 BCE
14.	**Sahadeva,** son of Pāndu and Mādrī was born in 3217 BCE.	3217-3124 BCE
15.	**Duryodhana,** son of Dhritarāṣṭra and Gāndhārī was born in 3222 BCE.	3222-3162 BCE
16.	**Abhimanyu,** son of Arjuna and Subhadrā was born around 3180 BCE. He married Uttarā in 3162 BCE and died in the Mahābhārata War (3162 BCE). He was just 18 years old when he died.	3180-3162 BCE
17.	**Parīkśit,** son of Abhimanyu and Uttarā born in Dec 3162 BCE. He married Madravatī. Yudhiṣṭhira handed over the reins of Hastinapur and Indraprastha to Parīkśit in 3126 BCE 36 years after the Mahābhārata War.	3162-3100 BCE
18.	**Janamejaya,** son of Parīkśit and Madravatī became the King of Hastinapur and Indraprastha around 3100 BCE.	3100-3050 BCE

The Internal Astronomical Evidence

Solar and Lunar Eclipses:

1. Sabhā Parva states that a solar eclipse occurred when Pāndavas left Hastinapur for Vanavāsa of thirteen years. An annular solar eclipse occurred on 25th Feb 3175 BCE. Both eclipses were visible in India (आसीन् निष्टानको घोरो निर्घातश्च महानभूत् । दिवोल्काश्चापतन् घोरा राहुश्चार्कमुपाग्रसत् ।।).[13]

2. Bhishma Parva indicates that a lunar eclipse followed by a solar eclipse was occurred before the Mahābhārata War. [चतुर्दशीं पञ्चदशीं भूतपूर्वां च षोडशीम्, इमां तु नाभिजानामि अमावास्यां त्रयोदशीम् ।। चन्द्रसूर्यावुभौ ग्रस्तौ एकमासे त्रयोदशीम्, अपर्वणि ग्रहावेतौ प्रजाः संक्षपयिष्यतः ।।].[14] A lunar eclipse was visible on 19th Dec 3163 BCE and a solar eclipse was visible on 3rd Jan 3162 BCE in India.

   Some scholars speculated that these two eclipses occurred in the month of Kārttika and Interpreted that a total penumbral lunar eclipse occurred on the full moon day of Karttika month before the Mahābhārata War (अलक्ष्यः प्रभया हीनः पौर्णमासीं च कार्त्तिकीम्, चन्द्रोऽभूद् अग्निवर्णश्च समवर्णे नभस्तले ।।).[15]

3. Musala Parva states that a lunar eclipse followed by a solar eclipse was again occurred in the beginning of 36th year, i.e., 3126-3125 BCE (एवं पश्यन् हृषीकेशः संप्राप्तं कालपर्ययम्, त्रयोदश्याम् अमावास्यां तान् दृष्ट्वा प्राब्रवीद् इदम् ।। चतुर्दशी पञ्चदशी कृतेयं राहुणा पुनः, तदा च भरते युद्धे प्राप्ता चाद्य क्षयाय नः ।।).[16] A lunar eclipse occurred on 9th Jan 3126 BCE and a solar eclipse occurred on 24th Jan 3126 BCE.

4. Udyoga Parva predicts the future occurrence of a solar eclipse based on the observation of moon just before the Mahābhārata War (सोमस्य लक्ष्म व्यावृत्तं राहुरर्कम् उपेष्यति। दिवोल्काश्च पतन्त्येताः सनिर्घाताः सकम्पनाः ।।).[17] A solar eclipse indeed occurred on 24th Nov 3162 BCE but the visibility in India needs to be verified.

Planetary Positions During the Mahābhārata Era

The Mahābhārata informs us that Vyāsa had already foretold to King Vichitravīrya in private about the war among the sons of Kuru dynasty and other kings who will kill one another. Vyāsa also lists various bad

omens that will result in great destruction. The Mahābhārata refers to certain planetary positions observed before the Mahābhārata War.

1. It is stated that Saturn was regularly close to Rohiṇī Nakśatra (ε Tauri) [रोहिणीं पीडयन्नेष स्थितो राजञ्शनैश्चरः।[18] प्राजापत्यं हि नक्षत्रं ग्रहस्तीक्ष्णो महाद्युतिः शनैश्चरः पीडयति पीडयन् प्राणिनोऽधिकम्॥[19]]. These Mahābhārata references of the Saturn's position in Rohiṇī should not be interpreted as the event occurred during the year of the Mahābhārata War. It was actually a general statement because Saturn regularly occulted Rohiṇī (Rohiṇī-Śakaṭa-Bheda) during the period 3500-3000 BCE. The Sanskrit word "Pīḍayan" has a suffix of "Śānach" and it clearly indicates the repeated occurrence. Saturn was close to Rohiṇī (ε Tauri) on 2nd Mar 3183 BCE before the Mahābhārata War (3162 BCE).

2. It is also mentioned that Saturn and Brihaspati were in Viśākhā Nakśatra in the beginning of Saṁvatsara (संवत्सरस्थायिनौ च ग्रहौ प्रज्वलितावुभौ। विशाखयोः समीपस्थौ बृहस्पतिशनैश्चरौ॥).[20] Considering the cycle of forty years (two sub cycles of twenty years), the first Saṁvatsara of the current cycle of the Mahābhārata era began on 15th Jan 3201 BCE, i.e., Māgha Śukla Pratipadā. Saturn and Brihaspati were in Viśākhā Nakśatra on 15th Jan 3201 BCE.

3. Aṅgāraka or Mars was in Maghā Nakśatra, Brihaspati crossed ecliptic and positioned in Śravaṇa Nakśatra (मघास्वङ्गारको वक्रः श्रवणे च बृहस्पतिः, भाग्यं नक्षत्रमाक्रम्य सूर्यपुत्रेण पीड्यते॥).[21] Mars was in Maghā and Jupiter crossed ecliptic and positioned in Śravaṇa around 1st Sep 3163 BCE. In all probability, "Brāhmam Nakśatram" might have been distorted to "Bhāgyam Nakśatram". Sūrya Putra, i.e. Saturn, had almost crossed Abhijit and entered Śravaṇa on 1st Sep 3163 BCE. If "Bhāgyam Nakśatram" is correct, then Saturn was in Uttara Phālgunī around Sep 3176 BCE.

4. Mars was in between Chitrā and Svāti Nakśatras around Jun 3162 BCE (ध्रुवः प्रज्वलितो घोरमपसव्यं प्रवर्तते | चित्रास्वात्यन्तरे चैव धिष्ठितः परुषो ग्रहः॥).[22] After crossing the ecliptic, Mars approached Jyeṣṭhā Nakśatra and appeared to be pleading to Anurādhā (also known as Maitra Nakśatra) to pacify her. Thereafter, Mars approaches

Brahmarāśi (Constellation Cygnus) and positions in Śravaṇa Nakśatra (कृत्वा चाङ्गारको वक्रं ज्येष्ठायां मधुसूदन। अनुराधां प्रार्थयते मैत्रं संशमयन् इव ॥[23] & वक्रानुवक्रं कृत्वा च श्रवणे पावकप्रभः। ब्रह्मराशिं समावृत्य लोहिताङ्गो व्यवस्थितः ॥[24]). The retrograde of Mars ended in between Anurādhā and Jyeṣṭhā Nakśatras in the first week of Aug 3162 BCE and Mars positioned in Śravaṇa Nakśatra in the middle of Oct 3162 BCE. Mars was in Śravaṇa before the beginning of the Mahābhārata War on 25th Oct 3162 BCE.

5. It is indicated in the Mahābhārata that Venus was ready to go on retrograde in Pūrva and Uttara Bhādrapada Nakśatras. Venus was in Śravaṇa Nakśatra before the beginning of the Mahābhārata War and it went on retrograde in Pūrvabhadra and Uttarabhadra Nakśatras in Dec 3162 BCE [शुक्रः प्रोष्ठपदे पूर्वे समारुह्य विशां पते, उत्तरे तु परिक्रम्य सहितः प्रत्युदीक्षते].[25]

6. Sh. Narahari Achar mistakenly assumed that Saturn was near Rohiṇī and Mars executed a retrograde motion before reaching Jyeṣṭhā Nakśatra in the same year. Thus, he fixed the date of the Mahābhārata War around 3067 BCE. In fact, the Mahābhārata does not indicate that these two events occurred in the same year. The Mahābhārata clearly mentions that Mars executed a retrograde motion close to Jyeṣṭhā Nakśatra in the year of the Mahābhārata War. But the Mahābhārata makes only a general statement about the regular occultation of Rohiṇī (ε Tauri) by Saturn.

Arundhati-Vasiṣṭha Observation

Vyāsa tells Dhritarāṣṭra that the sky used to burn during sunrise and sunset. It used to rain blood and bones. Arundhati also used to walk ahead of Vasiṣṭha (उभे संध्ये प्रकाशेते दिशां दाहसमन्विते । आसीद् रुधिरवर्षं च अस्थिवर्षं च भारत ॥ या चैषा विश्रुता राजंस्त्रैलोक्ये साधुसंमता । अरुन्धती तयाप्येष वसिष्ठः पृष्ठतः कृतः ॥).[26] Evidently, Vyāsa referred to these bad omens as the events of the past because he used the verb "आसीत्" in past tense. He also indirectly cautioned Dhritarāṣṭra that the same can repeat again. At the end of the Chapter Three of Udyoga Parva, it is stated: "After carefully listening to the words of his father (Vyāsa), Dhritarāṣṭra says, I agree that such events (bad omens) occurred in the past (पुरा) and undoubtedly these

events may occur again (पितुर्वचो निशम्यैतद् धृतराष्ट्रोऽब्रवीदिदम्। दिष्टम् एतत् पुरा मन्ये भविष्यति न संशयः ||).[27] Thus, Vyāsa referred to the astronomical event of Arundhati walking ahead of Vasiṣṭha that occurred in the past.

Sh. PV Vartak and Sh. Nilesh Oak assumed Arundhati-Vasiṣṭha observation to be the current astronomical event of the Mahābhārata era and fixed a date around 5561 BCE. In fact, Vyāsa refers to a past astronomical observation of Arundhati-Vasiṣṭha.

Kārttika, the Last Month of Śarad Ritu, During the Mahābhārata Era

Udyoga Parva unambiguously indicates Kārttika month to be the last month of Śarad Ritu (कौमुदे मासि रेवत्यां शरदन्ते हिमागमे।).[28] In Sanskrit literature, Kārttika Māsa is well known as Kaumuda Māsa. In Simhalese language, Kārttika month is also known as Kaumuda month.[29] Sh. Nilesh Oak argues that Mārgaśīrṣa month was the first month of Śarad Ritu during the Mahābhārata era. He quotes "मासानां मार्गशीर्षोस्मि" from the Bhagavad Gitā but it simply indicates that Mārgaśīrṣa has been traditionally considered to be a sacred month since the post-Vedic era. There is no credible evidence to establish that Mārgaśīrṣa was the first month of Śarad season during the Mahābhārata era.

The Date of Bhishma Nirvāṇa

Most of the Mahābhārata researchers did not undertake detailed study on the date of Bhishma Nirvāṇa. Since there are two contradictory statements in the Mahābhārata, almost all of them followed the statement of Bhishma that he was on the bed of arrows for fifty-eight days. Sh. Nilesh Oak is the first researcher who has conclusively falsified this approach. The Mahābhārata unambiguously indicates that Bhishma was on the bed of arrows for at least ninety-two days. Let us shortlist the verifiable data from the Mahābhārata:

- The Mahābhārata War began on Kārtika Krishna Chaturdaśī or Kārtika Amāvāsyā.
- The fall of Bhishma on the tenth day of the war.
- The Mahābhārata War lasted for eighteen days.
- After the war, Pāndavas stayed on the banks of Ganga for a month.

- Thereafter, Yudhiṣṭhira was coronated in Hastinapur.
- Yudhiṣṭhira and Krishna met Bhishma on the next day. Krishna indicated that Bhishma had only fifty-six days to live.
- Yudhiṣṭhira came back to Hastinapur and lived there for fifty nights.
- Yudhiṣṭhira confirmed that Uttarāyaṇa had already commenced. Therefore, he left Hastinapur and met Bhishma on the fifty-first day from the day of his last meeting with Bhishma.
- Bhishma told Yudhiṣṭhira that Uttarāyaṇa had already commenced and hinted the date as Māgha Śukla Pañchamī/Ṣaṣṭhī.
- The Mahābhārata mentions a date of Māgha Śukla Aṣṭamī related to Bishma Nirvāṇa.

All these data points are equally important and accurate except the duration of one month of Yudhiṣṭhira's stay on the banks of Ganga. The month was undoubtedly a lunar month of twenty-nine days. Since Mahābhārata roughly indicates the period of one month, we can take twenty-eight or twenty-nine days. The Mahābhārata unambiguously indicates that Bhishma died in the bright fortnight of Māgha month and on or after Māgha Śukla Aṣṭamī. It also indicates that Uttarāyaṇa commenced at least before the fiftieth day of Yudhiṣṭhira's stay in Hastinapur.

The Mahābhārata followed the five-year Yuga cycle and Pauṣa-Āṣāḍha intercalation scheme of ancient Paitāmaha Siddhānta. There are numerous references of five-year Yuga in the Mahābhārata:

संवत्सराः पञ्चयुगम् अहोरात्राश्चतुर्विधा।
कालचक्रं च यद् दिव्यं नित्यमक्षयमव्ययम्॥[30]
अनुसंवत्सरं जाता अपि ते कुरुसत्तमाः।
पाण्डुपुत्राः व्यराजन्त पञ्च संवत्सरा इव ॥[31]
तेशां कालातिरेकेण ज्योतिषां च व्यतिक्रमात्।
पञ्चमे पञ्चमे वर्षे द्वौ मासावुपजायते॥[32]

The last year of five-year Yuga cycle had thirteen months. The Mahābhārata War occurred in the fifth year (3162-3161 BCE) of five-year Yuga, i.e., 17th Jan 3166 to 22nd Jan 3161 BCE. Therefore, the year 3162-3161 BCE had two Pauṣa months. Following the same traditional calendar, we can reconstruct the five-year Yuga calendar of the Mahābhārata era.

Māgha Śukla Pratipadā		First Julian Day	Pauṣa Amāvāsyā		Last Julian Day	No. of Days
18 Jan	3261 BCE	529994	22 Jan	3256 BCE	531824	1831
23 Jan	3256 BCE	531825	27 Dec	3252 BCE	533625	1801
28 Dec	3252 BCE	533626	1 Jan	3246 BCE	535456	1831
2 Jan	3246 BCE	535457	6 Jan	3241 BCE	537287	1831
7 Jan	3241 BCE	537288	11 Jan	3236 BCE	539118	1831
12 Jan	3236 BCE	539119	15 Jan	3231 BCE	540949	1831
16 Jan	3231 BCE	540950	20 Jan	3226 BCE	542780	1831
21 Jan	3226 BCE	542781	25 Jan	3221 BCE	544611	1831
26 Jan	3221 BCE	544612	31 Dec	3217 BCE	546412	1801
1 Jan	3216 BCE	546413	4 Jan	3211 BCE	548243	1831
5 Jan	3211 BCE	548244	9 Jan	3206 BCE	550074	1831
10 Jan	3206 BCE	550075	14 Jan	3201 BCE	551905	1831
15 Jan	3201 BCE	551906	19 Jan	3196 BCE	553736	1831
20 Jan	3196 BCE	553737	23 Jan	3191 BCE	555567	1831
24 Jan	3191 BCE	555568	29 Dec	3187 BCE	557368	1801
30 Dec	3187 BCE	557369	3 Jan	3181 BCE	559199	1831
4 Jan	3181 BCE	559200	8 Jan	3176 BCE	561030	1831
9 Jan	3176 BCE	561031	12 Jan	3171 BCE	562861	1831
13 Jan	3171 BCE	562862	17 Jan	3166 BCE	564692	1831
18 Jan	3166 BCE	564693	22 Jan	3161 BCE	566523	1831
23 Jan	3161 BCE	566524	28 Dec	3157 BCE	568324	1801
29 Dec	3157 BCE	568325	1 Jan	3151 BCE	570155	1831
2 Jan	3151 BCE	570156	6 Jan	3146 BCE	571986	1831
7 Jan	3146 BCE	571987	11 Jan	3141 BCE	573817	1831
12 Jan	3141 BCE	573818	16 Jan	3136 BCE	575648	1831
17 Jan	3136 BCE	575649	21 Jan	3131 BCE	577479	1831
22 Jan	3131BCE	577480	25 Jan	3126 BCE	579310	1831
26 Jan	3126 BCE	579311	31 Dec	3122 BCE	581111	1801
1 Jan	3121 BCE	581112	5 Jan	3116 BCE	582942	1831
6 Jan	3116 BCE	582943	9 Jan	3111 BCE	584773	1831

10 Jan	3111 BCE	584774	14 Jan	3106 BCE	586604	1831
15 Jan	3106 BCE	586605	19 Jan	3101 BCE	588435	1831

Before 6777 BCE, ancient Indians generally followed the twenty-year Chaturyuga calendar of 7309 days. A half month (Ardha-māsa) of Adhika-māsa was dropped in the last year of the twenty-year Chaturyuga cycle. The practice of dropping Ardha-māsa was discontinued after 6777 BCE. Seemingly, a modified Paitāmaha Siddhānta was introduced in similar lines of the ninety-five-year Yuga cycle of Śatapatha Brāhmaṇa after 6777 BCE.

Now, we can arrive at the following dates:

		BCE
1.	The first day of the Mahābhārata War (Kārttika Chaturdaśī or Amāvāsyā)	25th Oct 3162 BCE
2.	The fall of Bhishma (10th day of the war) Mārgaśirṣa Aṣṭamī or Navamī	3rd Nov 3162 BCE
3.	The war lasted for 18 days or the 18th day of Mahābhārata war (Mārgaśirṣa Krishna Pratipadā/Dvitīyā)	11th Nov 3162 BCE
4.	The epoch of Yudhiṣṭhira era or the coronation of Yudhiṣṭhira in Hastinapur (on Pauṣa Pūrṇimā after the Mahābhārata War)	8th Dec 3162 BCE
5.	Yudhiṣṭhira and Krishna met Bhishma (Pauṣa Krishna Pratipadā)	9th Dec 3162 BCE
6.	Adhika Pauṣa month began on	24th Dec 3162 BCE
7.	Uttarāyaṇa occurred in Solar Calendar	15th Jan 3161 BCE
8.	Māgha Śukla Pratipadā	23rd Jan 3161 BCE
9.	Yudhiṣṭhira lived 50 days in Hastinapur. Thereafter, he met Bhishma on 51st day, i.e., Māgha Śukla Pañchamī/Ṣaṣṭhī.	27th Jan 3161 BCE
10.	Uttarāyaṇa and Ratha ṣṭamī in Lunisolar Calendar	23rd Jan/29th Jan 3161 BCE
11.	Bhishma went into Samādhi state (Māgha Śukla Aṣṭamī, Rohiṇī Nakśatra).	30th Jan 3161 BCE
12.	The date of Bhishma Nirvāṇa (Māgha Śukla Dvādaśī and the 92nd day counting from the 10th day of the Mahābhārata War.	3rd Feb 3161 BCE

13.	Bhishma Pañchakam: Bhishma was in Samādhi state for five days from Māgha Śukla Aṣṭamī to Māgha Śukla Dvādaśī.	30th Jan 3161 BCE to 3rd Feb 3161 BCE

Bhishma also said to Yudhiṣṭhira that he was on the bed of arrows since last fifty-eight days and these painful days were equal to 100 years. Almost all the Mahābhārata researchers followed this statement because it reconciles with the date of Māgha Śukla Aṣṭamī but it fails to establish the occurrence of Uttarāyaṇa before Bhishma nirvāṇa. In my opinion, the updater of the Mahābhārata might have edited this verse considering the date of Māgha Śukla Aṣṭamī. Most probably, the stanza "*Adhi-Pañchāśīti Rātryaḥ*" had been edited to "*Aṣṭa-Pañchāśatam Rātryaḥ*". In fact, Bhishma is comparing his painful days with 100 years. Therefore, "*Adhi-Pañchāśīti Rātryaḥ*", i.e., "more than eighty-five days" would be more comparable with 100 years than fifty-eight days.

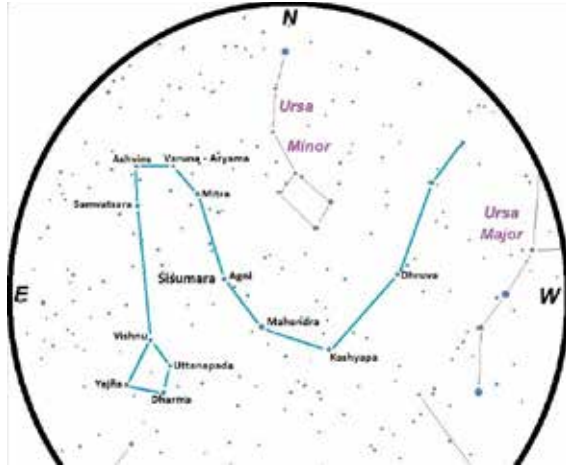
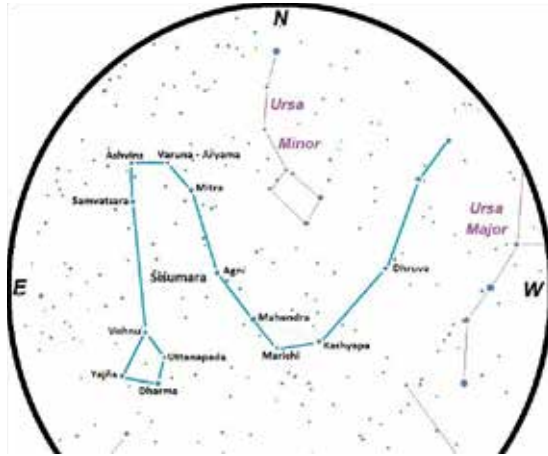
Sh. Nilesh Oak assumed the date of Bhishma Nirvāṇa on the day of Uttarāyaṇa and fixed on Phālguna Krishna Tritīyā (31st Jan 5560 BCE). The Mahābhārata clearly indicates the occurrence of Uttarāyaṇa at least before the fiftieth day of Yudhiṣṭhira's stay in Hastinapur. Moreover, the Mahābhārata unambiguously records Bhishma's death in the bright fortnight of Māgha month.

Vyāsa, the Author of the Mahābhārata and Purāṇas

Vyāsa was the original author of the Mahābhārata and eighteen Purāṇas. He also wrote a commentary on Yoga Sūtras of Patañjali. Purāṇas refer to the position of the celestial pole star in the tail of Śiśumāra (Draco) constellation. Bhāgavata, Matsya, Brahmāṇḍa, Vishnu and Vāyu Purāṇas give the description of the stars of Śiśumāra (Draco) constellation.[33]

Based on these Puranic descriptions of Śiśumāra constellation, Alpha Draconis star (Thuban) can be identified as Dhruva. The description given in Vishnu Purāṇa slightly differs from the description given in other Purāṇas. But all Purāṇas identify Alpha Draconis as Dhruva.

Evidently, Vyāsa, the author of Purāṇas, indicates that Alpha Draconis (Thuban) of Śiśumāra constellation was the celestial pole star during his lifetime.

The stars of Śiśumāra as described in Purāṇas:

The stars of Śiśumāra as described in Vishnu Purāṇa:

The Mahābhārata text, traditional and epigraphic evidence unambiguously suggest that the date of the Mahābhārata War and the epoch of the Yudhiṣṭhira era was 3162 BCE. Since Sūrya Siddhānta gained popularity after the 2nd century BCE, Indians started believing that the epoch of Kaliyuga commenced in 3101 BCE. In fact, Lāṭadeva proposed the epoch of Kaliyuga (3101 BCE) in his Sūrya Siddhānta considering the great conjunction of planets in Revatī Nakśatra. The Mahābhārata text and Āryabhaṭa clearly inform us that the epoch of Kaliyuga commenced before

the Mahābhārata War. According to Paitamaha Siddhantā, the epoch of Kaliyuga commenced in 3176 BCE when the Saptarṣis entered Māgha Nakśatra. Āryabhaṭa indicates that the epoch of Kaliyuga commenced on 5th Mar 3173 BCE. Bhāgavata tradition firmly believed that Kaliyuga cannot commence during the lifetime of Sri Krishna. Therefore, Bhāgavata Purāṇa proposed the commencement of Kaliyuga immediately after the death of Sri Krishna. Evidently, Bhāgavata Purāṇa's epoch of Kaliyuga was just an assumption.

Thus, all traditional, internal astronomical references, literary and epigraphic evidence unambiguously indicate that the Mahābhārata War took place in 3162 BCE.

The Summary of Evidence

		-3162
Internal Astronomical Evidence		
1.	Solar eclipse on the day when Pandavas left for Vanavasa. आसीन्निष्टानको घोरो निर्घातश्च महानभूत्। दिवोल्काश्चापतन्घोरा राहुश्चार्कमुपाग्रसत्॥ Sabhā Parva-72.21	Solar Eclipse occurred on 25 Feb -3175 and it was visible in India.
2.	Vedanga Jyotisha calendar (Magha Shukladi) was in vogue during Mahabharata era. संवत्सराः पञ्चयुगम् अहोरात्राश्चतुर्विधा। कालचक्रं च यद्दिव्यं नित्यमक्षयमव्ययम् (Sabha Parva 11.28) अनुसंवत्सरं जाता अपि ते कुरुसत्तमाः। पाण्डुपुत्राः व्यराजन्त पञ्च संवत्सरा इव॥ (Adi Parva 133.24 – Southern recension) तेषां कालातिरेकेण ज्योतिषां च व्यतिक्रमात्। पञ्चमे पञ्चमे वर्षे द्वौ मासावुपजायते॥ (Virata Parva 52.3)	Yes

3.	Bhishma calculated the exile period of Pandavas in the 5-Year Magha Shukladi Calendar (13 lunar years, 5 lunar months, 12 nights). तेषां कालातिरेकेण ज्योतिषां च व्यतिक्रमात् । पञ्चमे पञ्चमे वर्षे द्वौ मासावुपजायते ॥ तेशामभ्यधिका मासाः पञ्च द्वादश च क्षपाः । त्रयोदशानां वर्षाणामिति मे वर्तते मतिः ॥ Virata Parva 47.3-4	
4.	Mars was on retrograde between Chitra and Swati. ध्रुवः प्रज्वलितो घोरमपसव्यं प्रवर्तते । चित्रास्वात्यन्तरे चौवधिष्ठितः परुषो ग्रहः ॥ (Bhishma Parva 3.16) कृत्वा चाङ्गारको वक्रं ज्येष्ठायां मधुसूदन। अनुराधां प्रार्थयते मैत्रं संशमयन् इव ॥ (Udyoga Parva 141.8)	Yes
5.	Vyasa met Dhritarashtra just before few days before MB War and stated that after completing the retrograde motion, Mars is now positioned in Shravana Nakshatra. वक्रानुवक्रं कृत्वा च श्रवणे पावकप्रभः। ब्रह्मराशिं समावृत्य लोहिताङ्गो व्यवस्थितः॥ (Bhishma Parva 3.17).	Mars was in Shravana around 19th Oct to 5th Nov -3162 and MB war began on 25th Oct -3162
6.	It was predicted before Kurukshetra war that Venus was ready to go on retrograde. शुक्रः प्रोष्ठपदे पूर्वे समारुह्य विशांपते, उत्तरे तु परिक्रम्य सहितः प्रत्युदीक्षते॥ (Bhishma Parva 3.15)	Yes
7.	Mercury on retrograde in three Nakshatras before Kurukshetra War. त्रिषु पूर्वेषु सर्वेषु नक्षत्रेषु विशां पते । बुधः संपतते अभीक्ष्णं जनयन् सुमहद् भयम् ॥ Bhishma Parva 3.27	Yes

8.	Kaumuda month (Karttika) was the month of Sharad Ritu. कौमुदे मासि रेवत्यां शरदन्ते हिमागमे, स्फीतसस्यमुखे काले कलेः सत्त्ववतां वरः ॥ (Udyoga Parva 8.17) तथा बहुविधाकारा प्रावृन्मेघानुनादिता । अभ्यतीता शिवा तेषां चरतां मरुधन्वसु ॥ 9 क्रौञ्चहंसगणाकीर्णा शरत्प्राणिहिताभवत् ॥ 10 विशालाकाशनक्षत्रा शरत्तेषां शिवाभवत् ॥ 11 तेषां पुण्यतमा रात्रिः पर्वसन्धौ स्म शारदी तत्रैव वसतामासीत् कार्तिकी जनमेजय ॥ 16 (Vana Parva, 179, 9-11 & 16 – Critical Edition) पक्वौषधिवनस्फीतः फलवानल्पमक्षिकः । निष्पङ्को रसवत्तोयो नात्युष्णशिशिरः सुखः ॥ सप्तमाच्चापि दिवसादमावास्या भविष्यति । सङ्ग्रामं योजयेत्तत्र तां ह्याहुः शक्रदेवताम् ॥ (Udyoga 140: 17-18)	Yes. During MB era, Karttika and Margashirsha were the months of Sharad Ritu in Lunisolar calendar. शरदन्ते हिमागमे has been misinterpreted as end of Sharad and beginning of Hemanta. We need to interpret it as the begining of Sharad with reference to नात्युष्णशिशिरः सुखः. Only during the beginning of Sharad, the weather would be neither hot nor cold. Ancient Indians traditionally followed lunisolar calendar and the sharad began in Karttika month of lunisolar calendar during MB era. It may not be correct to fix the date of MB based on the occurrence of Autumnal equinox between Vishakha and Anuradha.
9.	Nakshatras starting from Dhanishtha and Seasons starting from Shishira. श्रविष्ठादीनि ऋक्षाणि ऋतवः शिशिरादयः (MB 14. 44.2 CE)	Yes. Magha Shukladi calendar began from Dhanishtha Nakshatra because Magha Shukla Pratipada used occur in Dhanishtha. In Samvatsara of 5-year Yuga calendar, Shishira (Phalguna and Chaitra) was the first season in MB era though Samvatsara began on Magha Shukla pratipada due to intercalation of second Pausha month.

10. Venus and Mars were in conjunction on the 18th Day of War.
भृगुसूनुधरापुत्रौ शशिजेन समन्वितौ
चरमं पाण्डुपुत्राणां पुरस्तात् सर्वभूभुजाम् ॥
Shalya Parva [Gita Press edition] (11:17)

Yes. There was a conjunction on 11th Nov -3162

11. When Moon was in Magha, no planet was visible in the sky at night before MB War.
मघाविषयगः सोमस्तद्दिनं प्रत्यपद्यत ।
दीप्यमानाश्च सम्पेतुर्दिवि सप्त महाग्रहाः ॥
Bhishma Parva 17.2

Yes. No Planet was visible in the sky at night on 18th Oct -3162

12. A lunar eclipse followed by a solar eclipse within 14 days before Kurukshetra war.
चतुर्दशीं पञ्चदशीं भूतपूर्वां च षोडशीम्,
इमां तु नाभिजानामि अमावास्यां त्रयोदशीम्
चन्द्रसूर्यावुभौ ग्रस्तौ एकमासे त्रयोदशीम्,
अपर्वणि ग्रहावेतौ प्रजाः संक्षपयिष्यतः ॥
(Bhishma Parva 3.28-29)

Lunar eclipse on 19 Dec -3163 and Solar eclipse on 3 Jan -3162. Both were visible in India.

13. Prediction of the future occurrence of a solar eclipse based on the observation of moon just before the Mahābhārata War and Solar eclipse occurred after MB War.
सोमस्य लक्ष्म व्यावृत्तं राहुरर्कम् उपेष्यति।
दिवोल्काश्च पतन्त्येताः सनिर्घाताः सकम्पनाः॥
(Udyoga Parva 141.10)
राहुश्चाग्रसदादित्यमपर्वणि विशां पते ।
चकम्पे च महाकम्पं पृथिवीं सवनद्रुमाः॥
Shalya Parva 55.10

Yes. A Solar eclipse occurred on 24 Nov -3162 but it was not visible in India.

14. A Pair of eclipses in the 36th year after Kurukshetra war.
एवं पश्यन् हृषीकेशः संप्राप्तं कालपर्ययम्,
त्रयोदश्याम् अमावास्यां तान्दृष्ट्वा प्राब्रवीद् इदम्।।
चतुर्दशी पञ्चदशी कृतेयं राहुणा पुनः,
तदा च भरते युद्धे प्राप्ता चाद्य क्षयाय नः।।
(Musala Parva 3.16-17)

Lunar eclipse on 11 Jan -3126 and Solar eclipse on 24 Jan -3126. Solar eclipse was not visible in India.

15.	Jupiter was on retrograde in Shravana and also occulted by Saturn before Kurukshetra War. मघास्वङ्गारको वक्रः श्रवणे च बृहस्पतिः, भाग्यं नक्षत्रमाक्रम्य सूर्यपुत्रेण पीड्यते।। (Bhishma 3.13)	Jupiter went on retrograde and occulted by Saturn in Shravana on 26 Aug -3163, one year before MB war.
16.	Jupiter crossed Rohini in the recent past. बृहस्पती रोहिणीं संप्रपीड्य बभूव चन्द्रार्कसमानवर्णः ।	Yes. In -3171, Jupiter crossed Rohini.
17.	Mahabharata war commenced on Karttika Amavasya सप्तमाच्चापि दिवसादमावास्या भविष्यति । सङ्ग्रामं योजयेत्तत्र तां ह्याहुः शक्रदेवताम् ।। (Udyoga 140:18)	Yes. MB was commenced on 25 Oct -3162.
18.	Bhishma Moksha or Nirvana on the 92nd day after the 10th day of Kurukshetra war. • The fall of Bhishma on the tenth day of the war. • The Mahābhārata War lasted for eighteen days. (8 days) • After the war, Pāndavas stayed on the banks of Ganga roughly for a month. (27/28 days) • Thereafter, Yudhiṣṭhira was coronated in Hastinapur. (Pushya Purnima) • Yudhiṣṭhira and Krishna met Bhishma on the next day. Krishna indicated that Bhishma had only fifty-six days to live. (56 days) (8+28+56 = 92 days)	Yes. Bhishma fell on 3 Nov -3162 and attained Moksha on 3 Feb -3161 (Magha Shukla Dvadashi)

19.	Bhishma attained Moksha immediately after Uttarayana स निर्ययौ गजपुरात् याजकैः परिवारितः। दृष्ट्वा निवृत्तमादित्यं प्रवृत्तं चोत्तरायणम् ।। दिष्ट्या प्राप्तोऽसि कौन्तेय सहामात्यो युधिष्ठिर। परिवृत्तो हि भगवान् सहस्रांशुर्दिवाकरः ।। माघोऽयं समनुप्राप्तो मासः पुण्यः युधिष्ठिर । त्रिभागशेषः पक्षोयं शुक्लो भवितुमर्हति ।। निवृत्तमात्रे त्वयने उत्तरे वै दिवाकरे। समावेशयदात्मानं आत्मन्येव समाहितः।। 12-47/3 CE	Yes. Ancient Indians traditionally followed lunisolar calendar and the Uttarayana began in Magha month of lunisolar calendar during MB era and Uttarayana was confirmed on Magha Shukla Saptami. It may not be correct to fix the date of MB based on the occurrence of Winter Solstice in Solar calendar.
20.	Observation of Super Moon or Harvest Moon or Lunar eclipse before Kurukshetra War अलक्ष्यः प्रभयाहीनः पौर्णमासीं च कार्त्तिकीम्, चन्द्रोऽभूद् अग्निवर्णश्च समवर्णे नभस्तल॥ (Bhishma Parva 2-23)	Yes (Harvest Moon)
21.	Ketu (Shveta Graha) positioned after crossing Chitra अभीक्ष्णं कम्पते भूमिरर्कं राहुस्तथाग्रसत् । श्वेतो ग्रहस्तथा चित्रां समतिक्रम्य तिष्ठति ।। Bhishma Parva 3-11	Yes
22.	Rahu (Shyama Graha) positioned in Jyeshtha श्यामो ग्रहः प्रज्वलितः सधूमः सहपावकः । ऐन्द्रं तेजस्विनक्षत्रं ज्येष्ठामाक्रम्य तिष्ठति ।। Bhishma Parva 3-15	Yes
23.	Saturn and Jupiter were in Vishakha Nakshatra before Kurukshetra war संवत्सरस्थायिनौ च ग्रहौ प्रज्वलितावुभौ। विशाखयोः समीपस्थौ बृहस्पतिशनैश्चरौ॥ (Bhishma Parva 3-25)	Yes

24.	Regular occultation of Rohini by Saturn रोहिणीं पीडयन्नेष स्थितो राजञ्शनैश्चरः। (Bhishma Parva 2.23) प्राजापत्यं हि नक्षत्रं ग्रहस्तीक्ष्णो महाद्युतिः शनैश्चरः पीडयति पीडयन् प्राणिनोऽधिकम् ॥ (Udyoga Parva 141-10)	Yes (Regular occultation during 3500-3000 BCE)
25.	Rising of Moon in the East during the Mahabharata war (14th /15th day on Chaturdashi or Purnima tithi) ततः कुमुदनाथेन कामिनीगण्डपाण्डुना। नेत्रानन्देन चन्द्रेण माहेन्द्री दिगलन्कृता॥	Yes
26.	Balarama's Pilgrimage of 42 days पुष्येण संप्रयातो ऽस्मि श्रवणे पुनरागतः। ततो मन्युपरीतात्मा जगाम यदुनन्दनः॥ तीर्थयात्रां हलधरः सरस्वत्यां महायशाः। मैत्रे नक्षत्रयोगे सम सहितः सर्वयादवैः॥ .... रौहिणेये गते शूरे पुष्येण मधुसूदनः (9-34-12-14)	No
27.	Yuga Chronology: Kurukshetra War took place at the end of Dvapara Yuga (5577-3176 BCE) अन्तरे चौव संप्राप्ते कलिद्वापरयोरभूत् । समन्तपञ्चके युद्धं कुरुपाण्डवसेनयोः ।। (Adi Parva 2-9)	Yes
28.	Kaliyuga had already commenced before Kurukshetra War यस्मिन् यत्नः कृतोऽस्माभिः स नो हीनः प्रयत्नतः, अकृते तु प्रयत्नेऽस्मान् उपावृत्तः कलिर्महान् ।। एतत् कलियुगं नाम अचिराद्यत् प्रवर्तते युगानुवर्तनं त्वेतत् कुर्वन्ति चिरजीविनः ।। (Vana Parva 148.37) प्राप्तं कलियुगं विद्धि प्रतिज्ञां पाण्डवस्य च आनृण्यं यातु वैरस्य प्रतिज्ञायाश्च पाण्डवः।। (Shalya Parva 59.21) कौमुदे मासि रेवत्यां शरदन्ते हिमागमे, स्फीतसस्यमुखे काले कलेः सत्त्ववतां वरः।। (Udyoga Parva 8.17)	Yes (Kali in commenced -3176 in Paitamaha Siddhanta)

29.	Rising of Arundhati before Vasishtha (Reference to this past observation as bad omen) उभे संध्ये प्रकाशेते दिशां दाहसमन्विते । आसीद्रुधिरवर्षं च अस्थिवर्षं च भारत।। या चैषा विश्रुता राजंस्त्रैलोक्ये साधुसंमता । अरुन्धती तयाप्येष वसिष्ठः पृष्ठतः कृतः।। (Bhishma Parva 2.30–31)	Yes

External Evidence

1.	Saptarshis in Magha Nakshatra (3176-3076 BCE)	Yes
2.	Sri Krishna left the mortal world on the day when Kaliyuga commenced.	Yes (Kali in -3126, Prabhava Samvatsara, Jupiter in Dhanishtha)
3.	The date of Bharata war given in the Aihole inscription.	Yes
4.	Epoch of Yudhishthira Samvat (Yellayya - कल्यब्दाः रूप (12) रहिताः पाण्डवाब्दाः प्रकीर्तिताः)	Yes (Kali in -3173, Brahma siddhanta, Prabhava Samvatsara, Jupiter in Aries.). 3173-12 = 3161 BCE, the epoch of Yudhishthira Samvat.
5.	Kalidasa's Jyotirvidabharanam – 3043 years of Yudhishthira Samvat elapsed before 33 BCE (3068 Kali)	Yes
6.	Kashmir chronology given in Rajatarangini	Yes
7.	Reconciliation of the chronology from Puranas, Buddhist and Jain sources.	Yes
8.	Jinavijaya refers to Jain Yudhishthira era that commenced 468 years after the epoch of Kaliyuga (3101 BCE) or Yudhishthira Samvat (3161 BCE).	Yes

9.	Vyāsa was the author of eighteen Purāṇas. Purāṇas refer to the position of the celestial pole star in the tail of Śiśumāra (Draco) constellation. Bhāgavata Purāṇa (2.2.24, 5.23.4-8 & 6.6.14), Brahmāṇḍa Purāṇa (1.1.85 and 2.23.99), Matsya Purāṇa (125.5-9 & 127.16-25), Vishnu Purāṇa (2.12) and Vāyu Purāṇa (1.101) give the description of the stars of Śiśumāra (Draco) constellation. Based on these Puranic descriptions of Śiśumāra constellation, Alpha Draconis star (Thuban) can be identified as Dhruva. Alpha Draconis star (Thuban) was the celestial pole star around 3900-1800 BCE.	
10.	Kutūhalamañjari refers to the year of Yudhiṣṭhira's coronation in Indraprastha as Surya-sunuja-nripa-saka. It informs us that Varāhamihira was born in the 8th tithi of the bright half of Chaitra month, in Jaya saṁvatsara and the year 3042 of Yudhiṣṭhira era.	Yes
11.	Kutūhalamañjari refers to the year of Yudhiṣṭhira's coronation in Indraprastha as Surya-sunuja-nripa-saka. It informs us that Varāhamihira was born in the 8th tithi of the bright half of Chaitra month, in Jaya saṁvatsara and the year 3042 of Yudhiṣṭhira era.	Yes
12.	Hisse Borala inscription: Saka 380 and Saptarshis in Uttara Phalguni Nakshatra.	Yes
13.	Nidhanpur Inscription of Bhaskaravarman: Bhagadatta and Vijaya (Arjuna) flourished 3000 years before Pushyavarman.	Yes

7

Devakīputra Vāsudeva Krishna of the Rigvedic Era and Krishna of the Mahābhārata Era

The evolution of ancient Indian calendric Yuga system – from the five-year Yuga and the twenty-year Chaturyuga of Vedic and post-Vedic era, to the Chaturyuga of 4320000 years of the post-Rāmāyaṇa era – had posed a great challenge to the Sūtas (Puranic updaters) of the post-Mahābhārata era. Unfortunately, the original texts of Purāṇas of the pre-Mahābhārata era and Purāṇas compiled by Vyāsa of the Mahābhārata era are not extant today. Seemingly, the available texts of Purāṇas and Itihasa (the Rāmāyaṇa, the Mahābhārata, the Yogavāsiṣṭha and more) have been recompiled from the Maurya period to the post-Gupta period. The main objective of the periodic recompilation was to document more and more ancient Upākhyānas (historical legends) and mythological narratives of Devas, and also to update the genealogical chronology of various kings. The Puranic ślokas related to Upākhyānas were periodic additions to the original Purāṇa texts compiled by Vyāsa, whereas the ślokas related to the genealogies had been periodically updated.

It appears that Itihasa texts like the Rāmāyaṇa and the Mahābhārata were also recompiled during the Maurya and the post-Maurya eras. The popularity of Adhbuta Rasa led to the evolution of the mythological narrative of Itihasa. Since, the ancient Sanskrit words "Kapi", "Garuḍa" and "Rikśa" became synonymous to monkey, vulture and bear respectively in Laukika Sanskrit, Sanskrit poets started imagining them as monkeys, vultures and bears to induce "Adbhuta Rasa". Interestingly, the vāhanas of Devatas (deities) like Mūṣaka, Vyāghra, Simha, Mayūra, Nandi, Garuda,

Śunaka, Haṁsa, Makara, Śuka, Ulūka, were actually human beings who were either the Sārathis of the chariots of Devatas or carried Devatas on their back. Gradually, these ancient Sanskrit names became synonymous with names of animal and bird species in Laukika Sanskrit. Travelling on the back of a strong man was practiced even during the Colonial era in India. The following photograph of a British merchant being carried by a lady on her back in Bengal has been taken in 1903.

The concept of the Chirajīvīs in the Rāmāyaṇa, the Mahābhārata and Purāṇas, and the concept of twenty-eight Vyāsas evolved due to the confusions in the chronology of events in ancient times. According to Puranic legends, Aśvatthāmā, Bāli, Vyāsa, Hanuman, Vibhīṣaṇa, Kripāchārya, Paraśurāma and Rishi Mārkanḍeya were the eight long-life personalities (अश्वत्थामा बलिर्व्यासो हनुमांश्च विभीषणः कृपश्च परशुरामश्च सप्तैते चिरजीविनः ।। सप्तैतान् संस्मरेन्नित्यं मार्कण्डेयमथाष्टमम् ।।). Saptarṣis, Jāmbavān, Devāpi, Maru, Muchukunda, Bāṇāsura and Kāka Bhuśunḍī, among others, were also considered to be Chirajīvīs. We will discuss the dates of these Chirajīvīs later.

Evidently, there were numerous chronological challenges in explaining the historical legends of ancient India. Consequently, the updaters of Itihasa texts and Purāṇas had committed certain mistakes in the presentation of genealogical and chronological history. One such

chronological mistake is the dating of Devakīputra Vāsudea Krishna. They erroneously assumed Devakīputra Krishna and Krishna of the Mahābhārata era to be identical, which led to the following chronological inconsistencies. I have conclusively established that Devakīputra Krishna lived in the Rigvedic era, around 11150-11050 BCE, whereas Krishna of the Mahābhārata era lived around 3223-3126 BCE. Let us discuss these chronological inconsistencies.

1. Cḥāndogyopaniṣad mentions that Devakīputra Krishna was a pupil of Rishi Ghora Āṅgirasa who wrote a Sūkta of Rigveda in Vedic Sanskrit. Evidently, Ghora Āṅgirasa and Devakīputra Krishna lived before the evolution of post-Vedic Sanskrit and Laukika Sanskrit. Sri Krishna of the Mahābhārata era was the pupil of Muni Sāndipani. Cḥāndogyopaniṣad narrates: "तद्धैतद्घोर आङ्गिरसः कृष्णाय देवकीपुत्रायोक्त्वोवाचापिपास एव स बभूव सोऽन्तवेलायामेतत् त्रयं प्रतिपद्येताक्षितमस्यच्युतमसि प्राणस शितमसीति तत्रैते द्वे ऋचौ भवतः" [Rishi Ghora Āṅgirasa imparted this teaching to Krishna, the son of Devakī and it quenched Krishna's thirst for any other knowledge and said: "When a man approaches death he should take refuge in these three thoughts: 'You are indestructible (akśata),' 'You are unchanging (aprachyuta),' and 'You are the subtle prāṇa.' With regard to that there are two Rik-mantras."].[1]

   Rishi Ghora Āṅgirasa was the author of one mantra of Rigveda.[2]

   अस्मे प्र यन्धि मघवन्नृजीषिन्निन्द्र रायो विश्ववारस्य भूरेः।
   अस्मे शतं शरदो जीवसे धा अस्मे वीराञ्छश्वत इन्द्र शिप्रिन् ।।

   This mantra is written in Cḥāndas or Vedic Sanskrit. Therefore, Ghora Āṅgirasa and his pupil Devakīputra Krishna lived in the Rigvedic era and not in the Mahābhārata era.

2. The legend of Kāliya Mardana informs us that Krishna was the contemporary of Kāliya Nāga. Kāliya was a descendant of the Nāga lineage of Kadru and Rishi Kaśyapa. The Garuḍas were the descendants of Vinatā and Rishi Kaśyapa Prajāpati. Admittedly, neither the Garuḍas were vultures nor the Nāgas were serpents. They were cousin brothers. The Garuḍas were always in conflict with the Nāgas. Kāliya Nāga was forced to leave his ancestral place Ramanaka

dvīpa (probably, a place between Yamuna and Charmaṇvatī Rivers) and took shelter in a place near Kālindī Hrada to avoid conflict with the Garuḍas. Rishi Saubhari was also residing near Kālindī Hrada. He warned Garuḍa not to enter Kālindī Hrada. Evidently, Kāliya Nāga and Garuḍa were contemporary of Rishi Saubhari who married fifty daughters of the Ikśvāku king Māndhātā (11150 BCE). Since Kāliya Nāga started harassing the people of Kālindī Hrada, Krishna taught him a lesson and asked him to leave Kālindī Hrada and go back to Ramanaka dvīpa. The Puranic updaters mythologized the legend by assuming Kāliya Nāga as a venomous serpent. Chronologically, Devakīputra Krishna and Kāliya Nāga lived during the lifetime of Rishi Saubhari.

3. According to Garga Saṁhitā and Brahma Vaivarta Purāṇa, Pūtanā was a daughter of Rakśasa King Bali, son of Virochana. Vāmana forced King Bali to hand over his kingdom to Devas. Probably, the Asuras became generals of King Kamsa. Pūtanā tried to kill Krishna in his childhood. Aghāsura, Bakāsura and Triṇavrata were the brothers of Pūtanā. Śakaṭāsura, a contemporary of Krishna was a descendant of Utkacha, son of Hiraṇyākśa. Baladeva or Balabhadra, the elder brother of Krishna, killed an Asura named Pralamba. Evidently, Asura King Bali's sons and daughters were contemporaries of Krishna. King Bali lived before the Rāmāyaṇa era. Since Purāṇa updaters mistakenly assumed Devakīputra Krishna to be a contemporary of the Mahābhārata era, they had no other option but to accept that King Bali was a Chirajīvī and lived up to the Mahābhārata era. In fact, there were no Asuras or Rakśasas during the Mahābhārata era.
4. Narakāsura, a contemporary of Devakīputra Krishna, was a descendant of Hiraṇyākśa. The Rāmāyaṇa refers to the legend of Narakāsura who was killed by Vishnu or Krishna. Therefore, Devakīputra Krishna lived before the Rāmāyaṇa era.
5. Dvivīḍa of the Kapi community was a friend of Narakāsura. Dvivīḍa started harassing the people of Ānarta kingdom to avenge the death of Narakāsura. He might have attempted to kidnap Krishna. Finally, Baladeva killed Dvivīḍa. Interestingly, Dvivīḍa and his twin brother Mainda helped Sri Rāma during his war against Rāvaṇa.

6. According to Harivaṁśa Purāṇa, Kālayavana was the son of Rishi Gārgya's Śyāla (brother-in-law) and Apsarā Gopāli. Kālayavana became the King of Yavanas and attacked Mathura. Krishna left Mathura and proceeded towards Dwārakā. Following Vāsudeva Krishna, Kālayavana entered a cave in Raivataka Hills (Girnar) and got killed by Muchukunda. This legend of Kālayavana clearly indicates that Devakīputra Krishna was a contemporary of Muchukunda, son of King Māndhātā (11150 BCE). Confused, Purāṇa updaters mistakenly started believing that Muchukunda was a Chirajīvī.
7. The legend of Ikśvāku King Nriga informs us that Krishna was also a contemporary of King Nriga. Interestingly, Sri Rāma relates the story of ancient Ikśvāku King Nriga to Lakśmaṇa in Uttara Kānda of the Rāmāyaṇa.[3] Sri Rāma also refers to Vāsudeva Krishna. The Mahābhārata also relates the story of Devakīputra Krishna and King Nriga (अथैनाम् अब्रवीद् असौ ननु देवकीपुत्रेणापि कृष्णेन नरके मज्जमानो राजर्षि नृगस्तस्मात् कृच्छ्रात् समुद्धृत्य पुनः स्वर्गं प्रतिपादितेति).[4] There was no Ikśvāku king named Nriga during the Mahābhārata era. In fact, King Nriga was a contemporary of King Māndhātā. It is evident that Devakīputra Krishna flourished before the Rāmāyaṇa era.
8. Devakīputra Krishna married Satyabhāmā, daughter of King Satrajit. The legend of Śyāmantaka Maṇi tells us that Jāmbavān killed Prasena, brother of Satrajit and had stolen Śyāmantaka Maṇi. Krishna defeated Jāmbavān and married his daughter, Jāmbavatī. This Jāmbavān was the ancestor of the Jāmbavān of the Rāmāyaṇa era. Yāska's Nirukta refers to Akrūra and Śyāmantaka Maṇi. The Mahābhārata refers to Yāska. Evidently, Yāska wrote Nirukta before the Mahābhārata era. Aitareya and Śatapatha Brāhmaṇas also refer to King Satrajit and his son Śatānīka. Yājñavalkya and Mahīdāsa Aitareya lived during the era of Post-Vedic Sanskrit and before the Rāmāyaṇa era.
9. The historical story of Pārijātaharaṇa as narrated in the Mahābhārata,[5] Harivaṁśa Purāṇa, Bharatamañjarī of Kśemendra, Harivijaya of Sarvasena relate that Krishna forcibly removed the Pārijāta tree from Amarāvatī, the capital of Indra and took it to Dwārakā after subjugating Indra and planted it in the courtyard of Satyabhāmā. There was no Indra during the Mahābhārata era.

10. Dravida, son of Krishna and Jāmbavatī, was the progenitor of Dravidas. The Dravida kings were already established in Tamil Nadu before the Mahābhārata era. Sahadeva subjugated Dravidas during the Rājasūya Yajña of Yudhiṣṭhira. The Dravida kings supported Pāndavas in the Mahābhārata War.
11. Pradyumna was the son of Krishna and Rukmiṇī. Once Asura Śambara abducted Pradyumna. Asura King Śambara and his descendants lived in the Rigvedic period. The Rāmāyaṇa mentions that Indra killed Śambara. There was no asura named Śambara during the Mahābhārata era.
12. Krishna and Pradyumna fought against Rākśasa Nikumbha and killed him. Nikumbha was a descendant of Hiraṇyakaśipu. Sunda and Upasunda were the sons of Nikumbha. The Rāmāyaṇa refers to Sunda and Upasunda. Evidently, Pradyumna flourished in the Rigvedic period.
13. Aniruddha was the son of Pradyumna. He married Uṣā, daughter of Bāṇāsura and granddaughter of King Bali. Evidently, Aniruddha lived in the Rigvedic period.
14. The legend of Kakudmi and Baladeva indicates that Revatī, a daughter of Kakudmi, reincarnated as Jyotiṣmatī after twenty-seven Yugas and married Balarāma. It seems Revatī was married to Baladeva, the elder brother of Devakīputra Krishna, in the beginning of Vaivasvata Manvantara, whereas Jyotiṣmatī was married to Balarāma II, the brother of Krishna of the Mahābhārata era.
15. Rishi Śaradvān was a great grandson of Rishi Gautama and Ahalya. He was a contemporary of King Pratīpa and his son Śāntanu. His son was Kripāchārya and daughter was Kripī who married Droṇa. Aśvatthāmā was the son of Droṇa and Kripī. Since Kripāchārya and Aśvatthāmā lived in the beginning of Vaivasvata Manvantara, they were also considered to be Chirajīvīs.
16. Megasthanese refers to Śūrasena, the land of two cities, namely Methora (Mathura) and Kleisobora (Kalpapura or Kalpipura). He considers Indian Krishna and Greek Heracles to be identical. He mentions that Indian Heracles lived 6042 years before Alexander.

Evidently, Megasthanes refers to Devakīputra Krishna of the pre-Rāmāyaṇa era.

17. Interestingly, Rishi Vasiṣṭha relates the story of Devakīputra Krishna to Ikśvāku king Dilīpa, an ancestor of Sri Rāma as recorded in Padma Purāṇa.[6]
18. Nammalvar, the fifth Tamil Vaishnava saint, (born in 3173-3172 BCE) and Āṇḍāl (born in 3076 BCE) wrote poems dedicated to Lord Sri Krishna. Āṇḍāl composed two poems in which she expressed her love for Sri Krishna. She imagined herself as Gopī of Sri Krishna. Evidently, Lord Sri Krishna was well established as Vishnu's incarnation before the Mahābhārata era. There are numerous references of Krishna as incarnation of Vishnu in the Mahābhārata. Udyoga Parva refers to Krishna as Nārāyaṇa.[7]

    एष नारायणः कृष्णः फल्गुनस्तु नरः स्मृतः नारायणो नरश्चैव सत्त्वम् एकं द्विधाकृतम्॥ एतौ हि कर्मणा लोकान् अश्नुवातेऽक्षयान् ध्रुवान् तत्र तत्रैव जायेते युद्धकाले पुनः पुनः॥ तस्मात् कर्मैव कर्तव्यम् इति होवाच नारदः एतद्धि सर्वम् आचष्ट वृष्णिचक्रस्य वेदवित्॥ शङ्खचक्रगदाहस्तं यदा द्रक्ष्यसि केशवम्।

    Seemingly, Nārāyaṇa was another name of Devakīputra Krishna. Rishi Nārāyaṇa, the author of Puruṣa Sūkta of Rigveda, was none other than Vāsudeva Krishna. Phalguna was the name of Arjuna of the Rigvedic era. Therefore, Mahābhārata refers to Phalguna as Nara.
19. Mahānārāyaṇopaniṣad was written in Post-Vedic Sanskrit before the Rāmāyaṇa era. It refers to Vāsudeva, Nārāyaṇa and Vishnu.
20. According to the Mahābhārata, Yudhiṣṭhira requests Bhishma to narrate the ancient legend of Śukācharya. If Śuka was the son of Vyāsa of the Mahābhārata era, how had Bhishma eulogized Śukāchārya of ancient times?
21. A dialogue between Śuka and Rāvaṇa has been related in the Yuddha Kānda of Adhyātma Rāmāyaṇa. How can Śuka of the Mahābhārata era be a contemporary of Rāvaṇa?
22. The seventh Sarga of Adbhuta Rāmāyaṇa relates the story of Krishna, an incarnation of Vishnu. Undoubtedly, Adbhuta Rāmāyaṇa indicates that Krishna had flourished before the Rāmāyaṇa era.

23. While answering to a question of Rishi Vasiṣṭha, Rishi Viśvāmitra says that Sri Rāma is indeed an incarnation of Vāsudeva as recorded in Yoga Vāsiṣṭha. Evidently, Vāsudeva Krishna must be dated before the Rāmāyaṇa era.
24. Jain Āchārya Hemachandra indicates that the incarnation of Vishnu as Krishna was before than that of Rama.
25. Kalpasūtra of Bhadrabāhu refers to Chakravartins, Baladevas and Vāsudevas. Later Jain texts indicate that Rāma was one of Baladevas.
26. Jain version of the Mahābhārata describes the story of Kauravas and Pāndavas and the descendants of Krishna and Balarāma. Interestingly, Jain Mahābhārata indicates that Krishna fought against Jarāsandha. Seemingly, Jarāsandha invaded Mathura at least twenty six years before the Mahābhārata War. He had the support of Kashmir king Gonanda I.
27. Guru Govind Singh gives the list of twenty-four Avatars. According to him, Balarāma was the eleventh Avatar, Rāma was the twentieth and Krishna was the twenty-first. How can Balarāma be placed nine Avatars before Rāma? Seemingly, Balarāma and Krishna were incarnated before the Rāmāyaṇa era.

It is evident that Devakīputra Vāsudeva Krishna lived in the Rigvedic era around 11150-11050 BCE and was the pupil of Ghora Āṅgirasa, whereas Sri Krishna, a descendant of Vāsudeva Krishna, lived in the Mahābhārata era around 3223-3126 BCE.

The Date of the Submergence of Dvāravatī (Dwarka)

Modern historians have concluded that the references of the lost city of Dvāravatī or Dwarka in Indian literature and the references of the lost city of Atlantis in Greek literature are mythical. But the new researches in Indian and world chronology clearly indicate that the civilizational history of the ancient nations of the world arguably commenced at the beginning of Holocene.

Devakīputra Krishna founded the city of Dvāravatī and Viśvakarmā was the civil engineer who planned the city. Dvāravatī city was built on the same place where the city of Kuśasthalī existed. Kuśasthalī was the

earliest capital of Saurashtra. King Raivata Manu (12500 BCE) founded this city near Raivataka Hill, or Girnar. Harivaṁśa Purāṇa relates that Sri Krishna built the city of Dvāravatī on the land released by the ocean. Probably, Kushasthali was submerged by the sea during Meltwater Pulse 1A, around 12000-11800 BCE, but resurfaced later.

According to Harivaṁśa, Dvāravatī was located close to the Girnar (Raivataka) Hill (बभौ रैवतकः शैलो रम्यसानुगुहाजिरः).[8] A river was also flowing into the city (महानदी द्वारवतीं पञ्चाशद्भिर्महामुखैः, प्रविष्टा पुण्यसलिला भावयन्ती समन्ततः). The length of Dvāravatī city was twelve Yojanas and the breadth was eight Yojanas (अष्टयोजनविस्तीर्णामचलां द्वादशायताम्, द्विगुणोपनिवेशां च ददर्श द्वारकां पुरीम्). It may be noted that Yojana was equal to 165-169m during the Vedic, post-Vedic and Rāmāyaṇa eras. Later, Yojana became equal to 13 km during the Mahābhārata era. Thus, Dwārakā city had a length of 2 km and the breadth of 1.5 km.

When Devakīputra Krishna died, succumbing to the arrow of a hunter around 11000 BCE, Dravida, son of Jāmbavatī, might have succeeded him in Dwārakā because Jāmbavatī's elder son Sāmba was cursed with leprosy by Sri Krishna. Sāmba had to do penance for twelve years. Pradyumna was killed in Dwārakā and his son Aniruddha ruled in Mathura. Seemingly, Dravida, son of Jāmbavatī, became the King of Dwārakā after the death of Pradyumna. Tamil poet Kapilar of the Sangam era clearly mentions in his poems (Stanza 201 and 202 of Purāṇanuru) that the ancestors of Velir King Irunkovel were the rulers of the fortified city of "Tuvarai". Nacchinarkkiniyar, a commentator of "Tolkappiyam", records the migration of the Velir kings from the city of "Tuvarai" or "Tuvarāpati" to Tamil Nadu. He indicates that the Velirs came to Tamil Nadu under the leadership of Rishi Akattiyanar (i.e. Agastya) and they belonged to the lineage of Netumutiyannal (i.e. Krishna). A Tamil inscription (Pudukottai State Inscriptions No. 120) also mentions the migration of the Velir kings from the city of "Tuvarai". Undoubtedly, "Tuvarai" or "Tuvarāpati" was the city of Dvāravatī or Dwārakā founded by Devakīputra Krishna.

Interestingly, the inscription of Velir king Satyaputra Athiyaman Neduman Anchi is found on the hillock named Jambaimalai of Jambai village in Villuppuram district of Tamil Nadu. It is generally argued that

the village got its name from the Jambunatheshvar temple but this Śiva temple itself is named after Jambunath. Evidently, Jambunath was none other than Jāmbavān, the father of Jāmbavatī. Since the Velir or Satyaputra kings were the progeny of Jāmbavatī, the Śiva Temple of Jambai village was named after Jambunath or Jāmbavān. Thus, we can conclusively establish that the ancestors of the Velir kings had migrated from the city of Dvāravatī and they were the progeny of Devakīputra Krishna and Jāmbavatī.

Bhāgavata Purāṇa relates that Devakīputra Krishna married Jāmbavatī, daughter of King Jāmbavān. Jāmbavatī was the mother of Sāmba, Sumitra, Purujit, Śatajit, Sahasrajit, Vijaya, Chitraketu, Vasuman, Dravida and Kratu. Thus, Dravida was the son of Krishna I and Jāmbavatī. These Velir kings, or the descendants of Dravida, migrated to South India and established their kingdom in the region between Tondaimandalam and the Chola Kingdom. Manusmriti mentions that the Dravidas were the Vrātya Kśatriyas because Jāmbavatī, mother of Dravida, was probably a non-Kśatriya princess.

According to Kapilar, forty-eight generations or forty-eight ancestors of ancient Irunko kings or ancient Velir kings reigned at Dvāravatī. He mentioned the title of "Settirunko" which means "Jyeṣṭha Irunko" or Irunkovel I. There were many Velir kings who had the title of "Irunkovel". Some Tamil inscriptions refer to the Velir kings as Irunko Muttaraisar, i.e., ancient Irunko kings. Therefore, Kapilar refers to the first Irunkovel as "Settirunko". Most probably, Irunkovel I was the forty-ninth Velir king who reigned at Dvāravatī.

Seemingly, forty-nine descendants of King Dravida reigned at Dvāravatī approximately for 1650 years, from 11050 BCE to 9400 BCE, considering the average reign of 33 years for each king. Dvāravatī was submerged by the sea around 9400-9300 BCE, during the reign of Irunkovel I, the forty-ninth king.

According to oceanographic studies, sea level suddenly rose 28m in 500 years, about 12000-11500 years ago. This accelerated sea level of 10000-9400 BCE has been named Meltwater Pulse 1B. Many Yādava families had to migrate eastwards and southwards. It appears that Indian

astronomers observed the event of "Rohiṇī Śakaṭa Bheda" (when either Mars or Saturn pass through Rohiṇī Śakaṭa, i.e. the triangle formation of stars in Taurus constellation) several times around 9400-9300 BCE. Probably, Dvāravatī city was submerged by the sea around 9400-9300 BCE. This may be the reason why Rishi Gārga's astrology had correlated Rohiṇī Śakaṭa Bheda with a deadly disaster. Lāṭadeva (3160-3080 BCE) also refers to Rohiṇī Śakata Bheda in his Sūrya Siddhānta because Saturn occulted e-Tauri during the Mahābhārata era.

The Sunken City of Atlantis

Greek philosopher Plato narrates the story of the city of Atlantis. According to him, the residents of Atlantis Island were seafaring people. Most probably, these seafaring people were the Paṇi Asuras who migrated from India (Gāndhāra) after 11000 BCE, due to weakening of monsoons. These Paṇis dominated in the region of the Mediterranean Sea. Plato says that the Atlantis people had conquered parts of Libya, Egypt among others and enslaved the people. The people of Athens fought against the invaders of Atlantis and conquered back parts of Libya and Egypt. He states that the Island city of Atlantis was located beyond the Pillars of Hercules at the strait of Gibraltar.

Interestingly, Plato states that the city of Atlantis was also submerged by the sea 9000 years before his lifetime. Modern historians date Plato around 428-348 BCE but considering the error of 660 years in the chronology of world history, Plato lived around 1088-1008 BCE.[9] Thus, the city of Atlantis might have been submerged by the sea around 10000 BCE. Evidently, the cities of Dvāravatī and Atlantis were submerged by the sea during the beginning of the accelerated rise of sea level, i.e. Meltwater Pulse 1B, around 10000 BCE.

Most probably, the descendants of Danu (Dānavas) migrated to Anatolia and Greece around 12000-11000 BCE and settled at Athens. Asuras migrated to Syria and came to be known as Assyrians. The Paṇis migrated to Lebanon, Cyprus and suchlike, and came to be known as Phoenicians. Druhyu's sons migrated to Syria and became known as Druze. The Asuras of Airyāna region (ancient Iran) came to be known as Airans. Modern linguists have misinterpreted Airans as Aryans.

The Identification of the Ancient City of Dvāravatī

Puranic legends relate that Devakīputra Krishna shifted his capital from Mathura to Dvāravatī after the killing of Kamsa. The invasions of Jarāsandha I and Kālayavana also compelled Krishna to move to Dvāravatī (कृष्णोऽपि कालयवनं ज्ञात्वा केशिनिषूदनः। जरासंधभयाच्चैव पुरीं द्वारवतीं ययौ ।।)[10] According to Harivaṁśa, Sri Krishna selected the area of ancient city of Kuśasthalī that was reclaimed from sea and requested Viśvakarmā to plan and design the entire city (देव यास्यामि नगरीं रैवतस्य कुशस्थलीम्।[11], वासार्थमीक्षितुं भूमिं तव देव कुशस्थलीम्।, तस्मिन्नेव ततः काले शिल्पाचार्यो महामतिः। विश्वकर्मा सुरश्रेष्ठः कृष्णस्य प्रमुखे स्थितः ।।[12]).

Raivata Manu (12500 BCE) built the city of Kuśasthalī. This city was submerged by the sea during the period of Meltwater Pulse 1A, around 12000 BCE. Raivata Manu's descendants had to shift their capital from Kuśasthalī to Prabhas Pātan-Kodinar region. King Kakuda or Kakudmi, the last known descendant of Raivata Manu, was the ruler of the region of Raivataka Hills or Saurashtra (किमर्थं च परित्यज्य मथुरां मधुसूदनः । मध्यदेशस्य ककुदं धाम लक्ष्म्याश्च केवलम्॥).[13] His daughter Revatī was married to Baladeva, the elder brother of Devakīputra Krishna. Seemingly, the area of Kuśasthalī resurfaced from sea due to a massive earthquake around 11200 BCE. Devakīputra Krishna built the city of Dwārakā on the hillocks close to the sunken city of Kuśasthalī around 11100 BCE.

According to Harivaṁśa, Raivataka Hill (Girnar) was to the East of Dvāravatī, Pañchavarṇa in the South, Indraketu-Pratīkāśa (a hillock like Indraketu that was probably located on an island) in the West and Venumān Mandarādri-Pratīkāśa (a hill of Bamboo trees like Mandara Hill that was probably Barda Hill of Porbandar) in the North (वभौ रैवतकः शैलो रम्यसानुगुहाजिरः। पूर्वस्यां दिशि लक्ष्मीवान् मणिकाञ्चनतोरणः ।। दक्षिणस्यां लतावेष्टः पञ्चवर्णो विराजते । इन्द्रकेतुप्रतीकाः पश्चिमां दिशमाश्रितः ।। सुकक्षो राजतः लश्चित्रपुष्पमहावनः ।। उत्तरां दिशमत्यर्थं विभूषयति वेणुमान्। मन्दराद्रिप्रतीकाशः पाण्डुरः पार्थिवर्षभ ।।).[14] A River named "Mahānadī" was also flowing through the city of Dvāravatī (महानदी द्वारवतीं पञ्चाशद्भिर्महामुखैः। श्रविष्टा पुण्यसलिला भावयन्ती समन्ततः ।।).[15]

After the accidental death of Devakīputra Krishna, probably, Pradyumna, son of Krishna, ascended to the throne but he died at

Dvāravatī in an internal conflict among Yādavas. Seemingly, Aniruddha, son of Pradyumna, had to move to Mathura. His son Vajra, or Vajranābha, succeeded him and became the King of Indraprastha. According to Tamil sources, forty-nine Velir kings or Dravida kings reigned at Dvāravatī. Dravidas or Velirs were the descendants of Dravida, son of Jāmbavatī. It appears that Dvāravatī started flooding at the end of Meltwater Pulse 1B, around 9400-9300 BCE (when the astronomical event of Rohiṇī Śakata Bheda was observed). Many Yādava families of Dvāravatī had to abandon the city built by Devakīputra Krishna. Some of them migrated to South India.

Puranic references unambiguously indicate the location of Dvāravatī close to Girnar Hills. Jain sources also acknowledge the presence of the city of Dvāravatī close to Girnar Hills. Recently, a submerged city in the Gulf of Khambat has been discovered in 2001. Khambat area was known as Sthaṁbhatīrtha in ancient times (तत्कृत्वा सानुमान्यैतान्स्तंभतीर्थमुपागता).[16] Marine archaeologists found a piece of wood in this submerged city and it was carbon dated to 7545-7490 BCE. Undoubtedly, this sunken city in the Gulf of Khambat was the original Dvāravatī, or Dwārakā, founded by Sri Krishna. Most probably, Dvāravatī city was flooded by the sea around 9400-9300 BCE, at the end of Meltwater Pulse 1B. Seemingly, it took at least 1500 years to completely submerge the area of Dvāravatī city. Thus, the piece of wood found in the area of the sunken city in the Gulf of Khambat was submerged around 8000-7500 BCE.

It is well known that the sea level of Gujarat coast was 100m below before the event of MWP 1A (12000 BCE). Though the low areas of Dvāravatī flooded around 9400-9300 BCE, it gradually submerged during the period 9400-7500 BCE. The sea level remained almost unchanged for 2000 years around 9500-7500 BCE. This may be the reason why a piece of wood is carbon dated around 7500 BCE.

Sh. Badrinarayan of NIOT (National Institute of Ocean Technology) studied the sunken city that was found 40m deep and 20 km away from the shores, in the Gulf of Khambat. A fortress found underwater is nearly 98m in length. The findings of the research on this sunken city are as under:[17]

1. There was an ancient city which was built on the two islands in the Gulf of Khambat. The fortress found is situated 131 ft (40m) below the current sea level.
2. The Southern Metropolis (the first Dwārakā) was dated at the end of the Second Ice Age, around 11000 BCE.
3. Sh. Badrinarayan of NIOT found that a couple of palaeochannels of old rivers were discovered in the middle of the Cambay area, under 20-40m underwater, at a distance of about 20 km from the present day coast: One over a length of 9.2 km and the other 9 km. Evidently, the southern palaeochannel was indeed Mahānadī, as recorded in Harivaṁśa, flowing through the city of Dvāravatī.
4. To the south of this township, in the Gulf of Cambay, side scan sonar picked up a drowned dead coral colony 400m long, about 200m wide, and at 40m deep under water, substantiated later by sampling. It is a well-known fact that these corals live in hardly 2 to 3m water depth, very near coastal areas. They require a clean environment and good sunlight. Obviously, the southern metropolis appears to have been near a sea coast at a particular point of time, when the metropolis itself stood on dry land with a good free-flowing river, and was a major bustling city.
5. It is seen that these features are 5m x 4m size on the eastern side, whereas the westernmost part had dimensions of 16m x 15m. The habitation sites are all seen to be laid in a tight grid-like pattern indicating a good sense of town planning by Viśvakarmā.
6. There is a rectangular (41m x 25m) shaped depression wherein one can see steps gradually going down to reach a depth of about 7m. Surrounding this depression there is a wall-like projection on all sides. This looks like a tank or bathing facility under 40m of sea water.
7. A black alluvium that somewhat semi-consolidated and collected above the river conglomerate gave an age of 19000 BP. Obviously the river has been flowing at least between 19000 years BP, prior to Glacial Maxima, and up to 3000 BP. This shows that the palaeochannel in the north was active and a riverine regime existed at least from about 19000 BP.

8. In the southern township or palaeochannel area, six samples suitable for dating were identified. Of these three are carbonized wooden samples; one was a sediment sample, one a fired pottery piece and one hearth material. Sample from the same carbonized wood was sent to National Geophysical Research Institute, Hyderabad, India and Geowissenschaftlicte Gemeinschaftsaulguben, Hannover, Germany for carbon dating. This was the first sample (Location 21° 03.08' N; 72 °30.83 E) from near the southern palaeochannel. This first gave a clue to the age and environment of the civilization. The calibrated age as per NGRI was 9580-9190 BP and as per Hannover Institute it was 9545-9490 BP. It means the age is about 9500 BP, or 7500 BCE.
9. One of the pottery piece found in this sunken city gave a date of 13000 ± 1950 BP. It is an important date. Another pottery piece that was kiln-fired, on OSL dating (Location 21 °12.54' N; 72 ° 30.370' E) by Oxford University gave an age of 16840 ± 2620 BP.
10. Three kiln-fired pottery pieces in the northern palaeochannel gave ages of 7506 ± 785 BP, 6097 ± 611 BP (both by Manipur University) and 4330 ± 1330 BP according to Oxford University.
11. The sun-dried pottery pieces were also collected. Three of the specimens were dated by OSL facility in Oxford. The results obtained are: (1) 31270 ± 2050 BP, (2) 25700 ± 2790 BP and (3) 24590 ± 2390 BP. A black slipped dish that was also sun-dried was dated in Oxford by OSL to be the age of 26710 ± 1950 BP.
12. The hearth material from the southern township (Location 21°03.04 N 72°30.70 E) by TL dating from PRL, Ahmedabad gave an age of 10000 ± 1500 BP, whereas the hearth material near the top in the northern township gave an age of 3530 ± 330 BP by OSL method, Oxford University. One of the charcoal pieces obtained on the northern side was tested by ^{14}C dating in BSIP, Lucknow. It gave a calibrated age of 3000 BP. It tallies very well with the age of upper most alluvium in northern palaeochannel.
13. The ancients were making potteries and were initially drying them in the sun. It is clear that the ancients have been firing clay to produce pottery for about 20000 years. That means they knew how to make,

maintain and manage fire. They appear to have succeeded in making fired pottery from about 16800 BP.

14. The strong evidence, i.e. the carbon dating of potteries, supports the presence of humans in the Gulf of Khambat from at least 31000 BP.

The research on the two sunken townships in the Gulf of Khambat reveals that the southern township was gradually submerged around 9400-7500 BCE and the northern township was submerged around 1500-1000 BCE. Evidently, the southern township was the ancient city of Kuśasthalī and Dvāravatī. This area had the presence of humans since 30000 BCE. Raivata Manu built the city of Kuśashthalī around 12500 BCE, which was submerged around 12000 BCE. Most probably, the area of Kuśasthalī and the area of Śūrpāraka (near Sopara, a town in Thana district) resurfaced in a massive earthquake around 11200 BCE. The Puranic legends relate that Paraśurāma (11220-11120 BCE) reclaimed the area of Śūrpāraka and Devakīputra Krishna (11150-11050 BCE) reclaimed the area of Kuśasthalī from the sea. The same earthquake might have opened up the Baramulla Pass, which resulted in a heavy outflow of water from the glacial lake of Kashmir valley. This also led to a massive flood in Sindh and Gujarat, which is nothing but the legend of the great flood during the time of Vaivasvata Manu. Seemingly, this massive earthquake caused tsunamis that were mythologized as Samudra Manthana.

Devakīputra Krishna built the city of Dvāravatī around 11100 BCE on the reclaimed land of the city of Kuśasthalī and it was submerged around 9400-9300 BCE. This sunken city of Dvāravatī was indeed the southern township found in the Gulf of Khambat. In all probability, the Yādavas of Dvāravatī city might have built the northern township of Dvāravatī (second city of Dwārakā) after the submergence of southern township. Possibly, this northern township (second Dwārakā) existed during the Mahābhārata era (3162 BCE), which was suddenly flooded in a tsunami. This northern township was completely submerged by the sea around 2000-1500 BCE.

Some scholars identified Bet Dwārakā as the city of Dwārakā of the Mahābhārata era. First of all, none of the literary or traditional sources indicate the location of Dwārakā in the Gulf of Kutch. Moreover, Bet

Dwārakā was known as the Shankhoddhar Tirth because Sri Krishna killed Śaṅkhāsura in this region. Therefore, Bet Dwārakā cannot be identified as the city of Dvāravatī built by Devakīputra Krishna.

Jaiminīya Aśvamedha and Vyāsa's Mahābhārata

According to a legend, Vyāsa's five disciples composed their versions of the Mahābhārata but Vyāsa rejected all of them. Another legend says that Jaimini wrote his version of the Mahābhārata. A Marathi text Pāndavapratāpa, written by Shridhara (17th century), mentions that Vyāsa condemned Jaimini for composing his version of the Mahābhārata but only Aśvamedha Parva of Jaiminīya Mahābhārata is extant today, because Jaimini had recited it to Janamejaya. Seemingly, these legends are mere speculations by later authors. There is no such information available in ancient texts.

Probably, an Itihasa text on Aśvamedha was composed in the post-Vedic era. Since Jaimini narrated the story of Aśvamedha to Kuru King Janamejaya of the Vedic period, it came to be known as Jaiminīya Aśvamedha. There is a dialogue between Jaimini and Mārkanḍeya in Mārkanḍeya Purāṇa. There were many Vyāsas and Jaiminis. It is difficult to establish the authorship of Jaiminīya Aśvamedha but it is certainly an ancient Itihasa text. The text was probably recompiled in ślokas after the Rāmāyaṇa era and certain chapters like *Nalopākhyāna*, *Kuśa-Lavopākhyāna*, *Sahasramukharāvaṇachritam (Sitāvijayam)* and *Mairāvaṇacharitam* had been added. During the period 1500-1000 BCE, Jaiminiya Aśvamedha has been again recompiled along with other Itihasa and Purāṇa texts. The famous "Anugītā", with thirty-six chapters, is part of Jaiminīya Aśvamedha (Chapter 16 to Chapter 51). Ādi Śaṅkara (568-536 BCE) quoted Anugītā in his commentary on Bhagavad Gitā. Evidently, Jaiminīya Aśvamedha was a popular Itihasa text since ancient times. Interestingly, Jaiminīya Aśvamedha was also translated along with the Mahābhārata into Persian (named Razmnama) during the time of Akbar.

The later updaters of Jaiminīya Aśvamedha had mistakenly assumed Veda Vyāsa and Devakīputra Krishna to be identical with Vyāsa and Krishna of the Mahābhārata era respectively. This chronological error led to a speculative theory that Jaimini also wrote the Mahābhārata, but

only Aśvamedha Parva was survived. In reality, Jaiminīya Aśvamedha relates the story of Aśvamedha performed in the Rigvedic era, whereas the Mahābhārata relates the history of the 32nd century BCE. Lakshmisha wrote "Jaimini Bhārata" in Kannada, based on Jaiminīya Aśvamedha. Therefore, Lakshmisha's Jaimini Bhārata differs from Kumara Vyāsa's (Narayanappa's) Karṇāta Bhārata Kathāmañjarī. The story of Kirātārjunīyam, the historical site of Arjuna's penance, and the descent of Ganga River by Bhagīratha (Mahabalipuram), indicate the popularity of Arjuna of Vedic times. Arjuna of the Rigvedic era was known as Phalguna. Evidently, Jaiminīya Aśvamedha was popular since ancient times. Let us chronologically analyze the historical events narrated in Jaiminīya Aśvamedha.

1. Jaimini relates the story of Aśvamedha to Janamejaya, son of Vishnurāta. We have no information of Vishnurāta of the Mahābhārata era. Bhāgavata Purāṇa refers to Brahmarāta, a contemporary of King Vishnurāta.[18] Seemingly, the names of Brahmarāta, Vishnurāta, Devarāta and so on belonged to Vedic era. According to Vishnu Purāṇa, Yājñavalkya, son of Brahmarāta, was one of the twenty-seven disciples of Vyāsa. Yājñavalkya I was the son of Devarāta and the disciple of Uddālaka I. Yājñavalkya II was the son of Brahmarāta. It may be noted that there were many Vyāsas from the Rigvedic era to the Mahābhārata era. Yājñavalkya II was the contemporary of King Janaka Vaideha (10870-10830 BCE). Thus, Brahmarāta and Vishnurāta can be dated around 10900 BCE. Since the story of Jaimini Aśvamedha and the story of the Mahābhārata got mixed up during the Gupta era, it was speculated that King Parīkśit of the Mahābhārata era came to be known as Vishnurāta because Sri Krishna (in form of Vishnu) might have saved Parīkśit in the womb of his mother Uttarā when Aśvathāmā used Brahmāstra on him.
2. According to Jaiminīya Aśvamedha, Vyāsa suggests King Dharmarāja (also referred to as Dharmātmaja, Dharmaputra and Dharmanandana) perform Aśvamedha, and Bhimasena also encourages him. The suitable horse for Aśvamedha was available only with King Yauvanāśva. The Ikśvāku king Māndhātā was known as Yauvanāśva because he was the son of Yuvanāśva. Bhima,

Vriṣadhvaja (son of Karṇa) and Meghavarṇa (son of Ghaṭotkacha) volunteer to bring the horse from the kingdom of Yauvanāśva. Sri Krishna discourages Dharmarāja and says that the Aśvamedha is not possible. But Bhima, Vriṣadhvaja and Meghavarṇa go to the city of Bhadrāvatī (Bhadresar of Gujarat) of Yauvanāśva and steal the horse. Furious, Yauvanāśva declares war with Dharmarāja but Dharmarāja and Bhima defeat him. Thereafter, Sri Krishna, Arjuna (Phalguna), Bhima, Vriṣadhvaja and Meghavarṇa lead the army and follow the Aśvamedha horse. Anuśālva, brother of Śālva, captures the horse but faces defeat. Pravīra, King of Māhiṣmatī and son of Nīladhvaja, also captures the horse but accepts defeat. King Nīladhvaja sends his son-in-law Agni to fight against Arjuna and Agni fails to defeat Arjuna. Jwālā was the wife of Nīladhvaja and Svāhā was the daughter of Nīladhvaja and Jwālā. Jwālā had a grudge against Arjuna because he defeated her son-in-law Agni. She requests his brother Unmukta, King of Kāshi, but Unmukta refuses to challenge Arjuna. Gangā, provoked by Jwālā, curses Arjuna that he will be killed by his own son within six months because Arjuna had killed her son Bhishma.

The Aśvamedha horse proceeds and gets stuck to a rock near the Ashrama of Rishi Saubhari. Arjuna is told by Rishi Saubhari that this rock is actually Chanḍī, cursed by her husband Uddālaka I. Arjuna liberates Chanḍī and restores her natural form. Thereafter, Haṁsadhvaja, King of Champāpuri, captures the horse. His fifth son, Sudhanvā, defeats Vriṣadhvaja, Pradyumna, Kritavarma, Anuśālva, Sātyaki and Nīladhvaja but gets killed by Arjuna. Haṁsadhvaja's other son, Suratha, is also killed by Arjuna.

The horse reaches Gaurivana (Sundervan?) and proceeds to Nāripura (Naripur of Rangpur division, Bangladesh?). Queen Pramilā of Nāripura captures the horse. Arjuna marries Pramilā and, thereafter, the horse arrives in Rakkasapura of Burma. King Bhiṣaṇa, son of Baka, challenges Arjuna but gets killed. Finally, the horse reaches Maṇipura (Manipur). Babhruvāhana, son of Chitrāṅgadā and Arjuna, mistakenly captures the horse. He had no other option to fight with Vriṣadhvaja and his father Arjuna. Probably, Arjuna and Vriṣadhvaja get injured and fall into coma during the battle against

Babhruvāhana. Ulūpi, daughter of a Nāga king named Kauravya, and a wife of Arjuna was also living with Chitrāṅgadā. Ulūpi played a major role in the upbringing of Babhruvāhana. She sends Puṅḍarīka to Pātāla (a Nāga kingdom on the banks of Ganga in Bangladesh) to bring Mritasañjīvikā from her father but Puṅḍarīka fails in his mission. Babhruvāhana invades and conquers the Nāgas and gets Mritasañjīvikā. The Nāga king Dhritarāṣṭra's son, Durbuddhi, goes to Maṇipura and tries to cut off Arjuna's head. Sri Krishna saves Arjuna and revives him and Vriṣadhvaja from Mritasañjīvikā brought by Babhruvāhana.

Babhruvāhana joins Arjuna for further course of Aśvamedha. Seemingly, the horse turns back from Maṇipura and reaches Himachal Pradesh in the North. Mayūradhvaja, King of Nāgari (Naggar city of Himachal Pradesh near Kullu), starts performing Aśvamedha and captures the horse. His son Tāmradhvaja (also known as Suchitra) fights with Arjuna and Sri Krishna. Finally, Mayūradhvaja abandons Aśvamedha and accepts defeat. Mayūradhvaja coronates his son Tāmradhvaja in the city of Tāmbravatī. Recently, some ancient copper mines have been discovered in Chamba district. There is a Tāmbravatī Mahādeva Temple in the city of Mandi. Most probably, the city of Tāmbravatī was situated in Chamba district.

The Aśvamedha horse now proceeds to the kingdom of Sārasvata King Viravarmaka. Probably, the kingdom of Viravarmaka was located in Rajasthan. Kāla married Mālini, daughter of Viravarmaka. Viravarmaka captures the horse but accepts his defeat. Thereafter, the horse proceeds to Kuntala kingdom (North Karnataka) of King Chandrahāsa who was an abandoned child of the King of Kerala. Chandrahāsa's sons capture the horse but Chandrahāsa accepts defeat. The horse reaches the ocean. Arjuna meets Rishi Baka Dālbhya. According to Tamil legends, Arjuna marries the queen of Pāndya Kingdom.

Thereafter, the horse arrives in Sindh. Duśśalā requests Sri Krishna to revive Suratha who was in coma. Sri Krishna revives Suratha. Finally,

Sri Krishna and Arjuna reach Hastinapura and narrate their victories over various kingdoms to Dharmarāja.

Dharmarāja of Hastinapura now prepares to perform final rituals of Aśvamedha. Vyāsa suggests that sixty-four men should go to Ganga accompanied by their wives to fetch water for Aśvamedha. Sri Krishna was accompanied by Rukmiṇī, Satyabhāmā and Jāmbavatī. Finally, Dharmarāja's Aśvamedha concludes successfully. However, a few days later, one Nakula (a mongoose?) comes to the court of Dharmarāja and says that his Aśvamedha is nothing compared to that of Ucchavritti of Saktuprastha. Brāhmaṇa Ucchavritti was a resident of Kurukshetra (सक्तुप्रस्थेन वो नायं यज्ञस्तुल्यो नराधिप। उच्चवृत्तेर्वदान्यस्य कुरुक्षेत्रनिवासिन ।।).

2. According to Tamil legends of the Sangam era, Alli Arasani was the only child of the Pāndya king. She learnt Yuddhavidyā in a Gurukula. Once Neenmughan (Nilamukha) usurped Pāndyan Kingdom but Alli Arasani led the Pāndyan army and killed Neenmughan. Thus, she succeeded her father and became the queen of Then Madurai (ancient Madurai that was submerged by the sea). She reigned over the Pāndya Kingdom, extended up to Sri Lanka. Sri Lanka was well connected through land route and Tāmraparṇi River of the Pāndya Kingdom used to flow into Sri Lanka before 7000 BCE. Arjuna came to Madurai following the Aśvamedha horse. He wanted to marry Alli Arasani but she sent the Nāgas to kill him. Arjuna somehow entered the palace of Alli Arasani in the guise of a Nāga and slept with her. He also tied Tāli on her. Finally, Arjuna succeeded in marrying Alli Arasani. Alli Arasani was also considered to be an incarnation of Mīnākśī.
3. Jaiminiya Aśvamedha also relates the story of Nala and Damayanti and Kuśa and Lava, the sons of Rāma. Evidently, the available text of Jaiminīya Aśvamedha was written after the Rāmāyaṇa era.
4. The story of Jaiminīya Aśvamedha indicates that Dharmarāja, Bhima, Arjuna (Phalguna), Sri Krishna Vriṣadhvaja and Meghavarṇa were all contemporaries of the Ikśvāku king Māndhātā and his son Muchukunda. Māndhātā had performed 100 Aśvamedhas.

Therefore, Māndhātā had a suitable horse for Aśvamedha. Arjuna met Rishi Saubhari who was a junior contemporary of Māndhātā. Arjuna also met Vaka Dālbhya who was a contemporary of the Nāga king Dhritarāṣṭra Vaichitravīrya as mentioned in Kāthaka Saṁhitā. Durbuddhi, son of Dhritarāṣṭra, went to Maṇipura to kill Arjuna. Evidently, the story of Jaiminīya Aśvamedha belonged to the Rigvedic era. Unfortunately, the stories of Jaiminīya Aśvamedha and Vyāsa's Mahābhārata got mixed up and led to numerous chronological inconsistencies.

5. Vyāsa's Mahābhārata clearly tells us that Arjuna of the Mahābhārata era went northwards and conquered up to Uttara Kuru, during the Rājasūya Yajña of Yudhiṣṭhira. He never went to South India. Moreover, almost all kings and armies of entire India participated in the Mahābhārata War. Yudhiṣṭhira became the emperor of a vast kingdom after the Mahābhārata War. It is unimaginable that Yudhiṣṭhira had performed Aśvamedha and sent Sri Krishna and Arjuna to conquer entire India after the Mahābhārata War. There was absolutely no need to perform Aśvamedha because he was already ruling over a vast kingdom and no other king had resources and energy to challenge Yudhiṣṭhira after the Mahābhārata War. It took more than sixteen years to overcome the pain of the Mahābhārata War for Dhritarāṣṭra, Gāndhārī, and Kunti. No sensible king would even think of waging another war after the gruesome battle of the Mahābhārata. My research reveals that Yudhiṣṭhira of the Mahābhārata era did not perform Aśvamedha. In fact, Dharmarāja of the Rigvedic era performed Aśvamedha. Later Puranic updaters added Aśvamedha Parva (14th), Svargārohaṇa Parva (18th) and more to Vyāsa's Mahābhārata because they have erroneously mixed up the stories of Jaiminīya Aśvamedha and Vyāsa's Mahābhārata.
6. Puranic updaters also mistakenly considered Yudhiṣṭhira of the Mahābhārata era and Dharmarāja of the Rigvedic era as identical. Dharmarāja of the Rigvedic era was a son of Yama Dharmarāja.
7. Rishi Uttaṅka was the contemporary of three generations of Ikśvāku kings Kuvalayāśva, Yuvanāśva and Yauvanāśva (Māndhātā). Rishi Uttaṅka also met Devakīputra Krishna. I have already explained that

Devakīputra Krishna lived in the Rigvedic era and Krishna of the Mahābhārata era lived around 3223-3126 BCE.

8. Ghaṭotkacha was the son of Bhima and Hiḍimbi. He married Ahilawati, also known as Maurvi, daughter of King Muru of the Yadu dynasty, and had three sons, Barbarīka, Añjanaparvan and Meghavarṇa. Irāvān was the son of Arjuna and Nāga princess Ulūpi. In all probability, Hiḍimba, Hidimbī and Ghaṭotkacha belonged to subspecies of Homo sapiens called "Cro-Magnon Man" that became extinct around 10000 BCE. Meghavarṇa, son of Ghaṭotkacha, lived around 11100 BCE when Dharmarāja of Hastinapura performed Aśvamedha Yajña.

Evidently, the historical events narrated in Jaiminīya Aśvamedha took place in the Rigvedic era, around 11100 BCE, whereas the Mahābhārata war occurred in 3162 BCE. We can also resolve many chronological inconsistencies in historical legends. According to the Mahābhārata, Paraśurama (11177 BCE), a contemporary of Kārtavīryārjuna, was the teacher of Bhishma, Droṇa and Karṇa. Hanuman I (11200-11100 BCE), son of Añjanā and Vāyu, was a contemporary of Bhima of the Jaiminīya Aśvamedha era, whereas Hanuman II lived in the Rāmāyaṇa era. Jāmbavān II (11160-11080 BCE) was a senior contemporary of Devakīputra Krishna, whereas Jāmbavān III lived in the Rāmāyaṇa era.

8

The Date of Āryabhaṭa, Lāṭadeva, Vriddhāryabhaṭa and Parāśara

Āryabhaṭa was the greatest and most celebrated mathematician-astronomer of ancient India. He pursued his independent and radical research on astronomy and presented the most scientific Siddhānta in his treatise "*Āryabhaṭīyam*". He was far ahead of his contemporary astronomers in mathematical astronomical research. Since his approach was drastically different from the traditional Indian astronomy, it took a considerable time to acknowledge the accuracy of Āryabhaṭa's Siddhānta in Indian astronomy. Unfortunately, there is still a controversy about the date of Āryabhaṭa and his birthplace. In fact, there are numerous unresolved issues in the chronology of ancient India due to the wrong sheet anchors.

Brief History of Ancient Indian Astronomy

Vedic lunisolar calendar had followed a concept of five-year Yuga for intercalation of two months (Pauṣa and Āṣāḍha) in five years. According to Lagadha Siddhānta, the first day of the first year of a five-year Yuga was Māgha Śukla Pratipadā and the last day of the fifth year was Pauṣa Krishna Amāvāsyā (*Māgha-śukla-prapannasya Pauṣa-Krishna-samāpinaḥ*). Autumnal equinox or Śarad season was the beginning of Saṁvatsara. Atharvaveda also confirms the same (*Ayanam Maghāsu cha*).

Initially, only one scheme of intercalation had been followed in Vedic astronomy but it realized the importance of Kśayatithis, Kśaya Ardha-māsas and Kśayamāsas in the scheme of intercalation. Consequently, numerous astronomical Siddhāntas have been evolved, based on multi-generational record-keeping of astronomical observations. There

were eighteen astronomical Siddhāntas, namely Paitāmaha (Brahma), Vyāsa, Vasiṣṭha, Atri, Kaśyapa, Nārada, Garga, Marīchi, Manu, Aṅgira, Lomaśa, Puliśa, Chyavana, Yavana, Bhrigu, Śaunaka, Sūrya and Parāśara, in the tradition of ancient Indian mathematical astronomy. At the end of Kritayuga, Maya, a great Asura, authored the first version of Sūrya Siddhānta around 6778 BCE. Yavana Siddhānta evolved based on Sūrya Siddhānta of Mayāsura after the Rāmāyaṇa era (5677-5577 BCE). Parāśara refers to the 19th Siddhānta of Pulastya.

Three Āryabhaṭas

There were three Āryabhaṭas in the tradition of Indian astronomy. Historians generally agree that there were only two Āryabhaṭas. One was the author of Āryabhaṭīyam and another was the author of Mahārya-Siddhānta. But the author of Mahārya-Siddhānta clearly mentions that Parāśara and Vriddhāryabhaṭa Siddhāntas had been established after very little time had elapsed from the epoch of Kaliyuga (एतत् सिद्धांतद्वयं ईषद् याते कलौ युगे जातम्).[1]

Parāśara was the father of Vyāsa and lived before the Mahābhārata War. Vriddhāryabhaṭa flourished before Āryabhaṭa. Therefore, we can conclude that Vriddhāryabhaṭa also lived before the Mahābhārata War (3162 BCE). The author of Mahārya-Siddhānta also records that he has recompiled the Siddhānta of Vriddhāryabhaṭa in his words (वृद्धार्यभटप्रोक्तात् सिद्धांतात् यन्महाकालात् । पाठगतमुच्छेदं विशेषितं मया स्वोक्त्या.....).[2] Historians have speculated that Āryabhaṭa might have written another book called "Āryabhaṭa-Siddhānta", which is now lost. In reality, the text of Vriddhāryabhaṭa Siddhānta was available in ancient times. Later, another Āryabhaṭa has recompiled the ancient Vriddhāryabhaṭa Siddhānta in his treatise "Mahārya-Siddhānta".

Thus, there were three Āryabhaṭas. Vriddhāryabhaṭa (Āryabhaṭa I), the founder of Ārya-Siddhānta, lived before the Mahābhārata War (3162 BCE). Āryabhaṭa (Āryabhaṭa II), the author of Āryabhaṭīyam, lived after Vriddhāryabhaṭa. Al Beruni also records that a senior Āryabhaṭa lived before the Āryabhaṭa of Āryabhaṭīyam. Āryabhaṭa III, the author of Mahārya-Siddhānta lived after Brahmagupta. Let us discuss the birthplace and the date of Āryabhaṭa II. Evidently, Vriddhāryabhata must

be dated around 3250-3150 BCE. Āryabhaṭa, the Author of Aryabhatiyam lived around 3173-3100 BCE. Brahmagupta heavily criticizes Āryabhaṭa of Aryabhatiyam in his Brahmasiddhanta but praises Āryabhaṭa (Vriddharyabhata) in Khandakhadyaka. Confused historians speculated that Āryabhaṭa might have written another book called "Āryabhaṭa - Siddhanta" which is now lost. In fact, Āryabhaṭa wrote only one book i.e. Aryabhatiyam. Some scholars have opined that the author of Mahāsiddhānta was Āryabhaṭa of Aryabhatiyam. But it is an impossible imagination. Āryabhaṭa used very ancient and cryptic numerals system in Aryabhatiyam whereas Mahāsiddhānta used Katapayadi system which was evolved after 200 CE. Therefore, Āryabhaṭa of Aryabhatiyam cannot be the author of Mahāsiddhānta.

Thus, there were three Āryabhaṭas:

1. Vriddhāryabhata - 3250-3150 BCE
2. Āryabhaṭa, the author of Āryabhaṭīyam - 3173-3100 BCE
3. Āryabhaṭa the author of Mahāsiddhānta - 4th century CE

The Birthplace of Āryabhaṭa II, the Author of Āryabhaṭīyam

Bhāskara I, who wrote a commentary on Āryabhaṭīyam, refers to Āryabhaṭa as "Aśmakīya" and Āryabhaṭīyam as "Aśmakatantra". Evidently, Bhāskara I indicates that Āryabhaṭa belonged to Aśmaka janapada. Nilakantha Somasutvan unambiguously records that Āryabhaṭa was born in Aśmaka Janapada. The Rāmāyaṇa and the Mahābhārata texts mention Aśmaka Mahājanapada of Dakśiṇāpatha. Vāyu and Brahmāṇḍa Purāṇas refer to Aśmaka janapada as a Dākśinātya janapada. Buddhist texts indicate that Aśmaka janapada was located on the banks of Godāvarī River. Aṅguttara Nikāya mentions Aśmaka as Mahājanapada. Buddhist texts also mention another janapada known as Assaka. Assaka is Aśvaka or Aśvakāyana, which is located close to Indus and Kurram Rivers. Varāhamihira's Brihat-Saṁhitā mentions Aśvaka, not Aśmaka. Greek historians refer to Aśvakāyanas as "Assakonoi". Some historians mistakenly consider Assaka and Aśmaka as the same but Assaka was located in Afghanistan, close to Indus River, whereas Aśmaka was situated between Godāvarī and Krishna Rivers.

According to the Rāmāyaṇa, Kalmāṣapāda was the son of Ikśvāku dynasty and became the King of Kosala. Madayanti was his queen. She gave birth to a son named Aśmaka from Vasiṣṭha by Niyoga ritual. The Mahābhārata and Purāṇas mention that Kalmāṣapāda was the son of Sudāsa. Thus, the Rāmāyaṇa, Mahābhārata and Purāṇas indicate that Aśmaka, the son of Ikśvāku King Kalmāṣapāda, was the founder of Aśmaka Kingdom. He also founded the city of Pauḍanya. Thus, Aśmaka Kingdom came into existence in the pre-Rāmāyaṇa era. In Sanskrit, Aśma means stone. Since the area between Godāvarī and Krishna Rivers has many big rocks and boulders, it was named as Aśmaka.

Aśmaka kings supported Pāndavas in the Mahābhārata War under the leadership of Dhriṣṭadyumna. Pāṇini also mentions Aśmaka janapada. Matsya Purāṇa informs us that twenty-five kings of Aśmaka reigned before Mahāpadma Nanda who eliminated Kśatriyas of all janapadas.[3] Thus, the Aśmaka Kingdom, established by Ikśvāku King Aśmaka in the pre-Rāmāyaṇa era, was ended by the Nanda Dynasty of Magadha (1664-1596 BCE). Many copper plates of Ikśvāku kings have been found in Andhra Pradesh and Telangana. It appears that the descendants of ancient Aśmaka kings re-established themselves later but their kingdom got absorbed into the Kingdom of Śātavāhanas after 828 BCE.

The City of Kusumapura, a Center of Astronomy

Āryabhaṭa himself tells us that he pursued his astronomical research in the city of Kusumapura (आर्यभटस्त्विह निगदति कुसुमपुरे अभ्यर्चितं ज्ञानम्).[4] A śloka mentions that Āryabhaṭa was the Kulapati of the Gurukula at Kusumapura.[5]

सिद्धान्तपञ्चकविधावपि दृग्विरुद्ध–मौढ्योपराग–मुखखेचरचारक्लृप्तौ।

सूर्यः स्वयं कुसुमपुर्यभवत् कलौ तु भूगोलवित् कुलप आर्यभटाभिधानः॥

(When the methods of five Siddhāntas [Pauliśa, Romaka, Vasiṣṭha, Paitāmaha and Saura] began to yield results conflicting with the observed phenomena such as the setting of planets and the eclipses, etc., there appeared in Kali age at Kusumapura Sūrya himself in the guise of Āryabhaṭa, the Kulapa (Chancellor) well-versed in astronomy.)

Many commentators of Āryabhaṭīyam simply identified Kusumapura as a city where Āryabhaṭa lived. Al Beruni also called

him "Āryabhaṭa of Kusumapura". According to Bhāskara I, Āryabhaṭa was born in Aśmaka janapada. Evidently, Kusumapura was the capital of Aśmaka janapada. The Aśmaka Kingdom declined during the period of the Nanda Dynasty of Magadha (1664-1596 BCE). Mahāpadma Nanda annexed the Aśmaka Kingdom. Kusumapura was the center of education in Aśmaka Janapada, which was located on the banks of the Godāvarī River. Bodhan was the capital of the Aśmaka kings.

In all probability, Kusumpur village in Khanapur sub district of Adilabad district, Telangana, was the real Kusumapura of Aśmaka janapada. Puṣpapura of Magadha cannot be identified as Kusumapura of Āryabhaṭa because Yugapurāṇa mentions that King Śiśunāga's son Udāyī founded Puṣpapura around 2000 BCE. Āryabhaṭa lived 1150 years before the foundation of Puṣpapura of Magadha.

Historians generally agree that Kusumapura was Pataliputra of Magadha Kingdom. In fact, Puṣpapura was another name of Pataliputra. Therefore, historians conclude that Pataliputra was indeed Kusumapura. Āryabhaṭa went to Pataliputra for his studies and became the head of Nalanda University. Historians also quote a passage from the commentary of Bhāskara I to establish that Kusumapura was Pataliputra.

"Kusumapure abhyarcitam jñānam । kusumapuram pāṭaliputram, tatra abhyarcitam jñānam nigadati । evam anuśrūyate ã ayam kila svāyaṃbhuvasiddhāntaḥ kusumapuranivāsibhiḥ kṛtibhiḥ pūjitaḥ, satsu api pauliśa-romaka-vāsiṣṭha-sauryeṣu । tena āha ã "kusumapure abhyarcitam jñānam" iti…"

It may be noted that the available commentary of Bhāskara I on Āryabhaṭīyam is in fact a commentary of Someśvara on the commentary of Bhāskara I. It is not the original commentary of Bhāskara I. Someśvara himself states at the end of the commentary that "I have presented the gist of Bhāskara's "*Āryabhaṭoktasūtravivriti*" in my commentary on Āryabhaṭīyam".

"spaṣṭārthapratipādakam mṛdudhiyām sūktam prabodhapradam tarkavyākaraṇādiśuddhamatinā ***someśvareṇa adhunā । ācāryāryabhaṭoktasūtravivṛtiḥ yā bhāskarotpāditā tasyāḥ sārataram vikṛṣya racitam bhāṣyam prakṛṣṭam laghu ॥****"*

Someśvara also quoted "*Mahābhāskarīyam*" many times in his commentary. If it is the original commentary of Bhāskara I, why did Bhāskara I quote his own work to justify his viewpoint? It is absurd to imagine that Bhāskara I quoted himself. Moreover, Kerala astronomer Śaṅkaranārāyaṇa clearly tells us that Bhāskara I first wrote his commentary on Āryabhaṭīyam, then *Mahābhāskarīyam* and thereafter *Laghubhāskarīyam*.[6]

If the commentary on Āryabhaṭīyam was the first work of Bhāskara I, how could he quote from his second work "*Mahābhāskarīyam*"? Therefore, the available commentary is essentially the commentary of Someśvara who also presented the gist of Bhāskara I's commentary and quoted extensively from *Mahābhāskarīyam* of Bhāskara I.

As I have already explained that Aśmaka was an ancient janapada. It was founded in the pre-Rāmāyaṇa era but Mahāpadma Nanda of Magadha annexed Aśmaka Kingdom in the 17th century BCE. Thus, the Aśmaka Kingdom lost its glory by 1600 BCE. Someśvara lived around 628-629 CE because he mentions that a total of 1986123730 years had elapsed since the beginning of Kalpa. Therefore, Someśvara wrote his commentary in Kaliyuga 3730, i.e. 628-629 CE. Since Someśvara lived 2000 years after the fall of Aśmaka Kingdom, he mistakenly identified Kusumapura as Pataliputra, considering Puṣpapura and Kusumapura to be the same. Therefore, we must identify Kusumapura as the city of Aśmaka janapada and not Pataliputra of Magadha janapada.

The Date of Āryabhaṭa

Āryabhaṭa himself records his date of birth in the treatise "Āryabhaṭīyam" (*"Ṣaṣṭyabdānām ṣaṣṭir -yadā vyatītāḥ trayaśca yugapādāḥ, Tryādhika vimśatir-abdāḥ tadeha mama janmano'tītāḥ).*[7] There is a controversy about the exact reading of this verse. TS Narayana Shastry and Kota Venkatachalam claimed that the original manuscripts of Āryabhaṭīyam had the text as "*Ṣaṣṭyabdānām ṣadbhir" (60 x 6 = 360) and not "Ṣaṣṭyabdānām ṣaṣṭir*" (60 x 60 = 3600) but somebody has edited it during the 19th century. Though they claimed so, they could not produce any concrete evidence to prove it. We have not found any manuscript of Āryabhaṭīyam till date that contained the text as "*Ṣaṣṭyabdānām ṣadbhir*".

All commentators of Āryabhaṭīyam also gave the verse as "Ṣaṣṭyabdānām ṣaṣṭir" (60 x 60 = 3600). Therefore, we have to accept that the original verse reads as ""Ṣaṣṭyabdānām ṣaṣṭir" and not as "Ṣaṣṭyabdānām ṣadbhir".

Before discussing the exact date mentioned by Āryabhaṭa, it is extremely important to discuss the date of other Indian astronomers who quoted Āryabhaṭa or wrote commentaries on Āryabhaṭīyam.

Varāhamihira (146-74 BCE)

Varāhamihira mentions Āryabhaṭa in his work "*Pañchasiddhāntikā*" *(Laṅkārdharātra-samaye dina-pravrittim jagāda cāryabhaṭaḥ).* Varāhamihira records Śaka 427 elapsed (156-155 BCE) as the *Karaṇābda* for calculation of Ahargaṇa (counting of days) *[Saptāśvivedasaṅkhyam Śaka-kālamapāsya Chaitra-śuklādau].* Āmarāja Daivajña, who wrote a commentary on *"Khandakhādyaka"* of Brahmagupta, mentions that Varāhamihira died in Śaka 509 (74 BCE) *[Navādhika-pañca-śata-saṅkhya-śake Varāhamihirācāryo divam gataḥ].* Considering the epoch of Śaka era (583 BCE),[8] Varāhamihira undoubtedly lived between 156 BCE and 74 BCE. A śloka of Kutūhalamañjari mentions that Varāhamihira was born in Jaya Saṁvatsara, i.e., 146 BCE.

Interestingly, Varāhamihira refers to Lāṭadeva, a renowned disciple of Āryabhaṭa.[9] Moreover, Varāhamihira used the verb *"Jagāda"* in the remote past tense *(Parokśa bhūtakāla)* with reference to Āryabhaṭa.[10] Thus, Āryabhaṭa was a historical personality for Varāhamihira and both can never be contemporaries. According to Sanskrit grammar, the remote past tense *(Parokśa bhūtakāla)* cannot be used for living or contemporary persons and is to be used only for events occurred earlier than the lifetime of the user. Therefore, Āryabhaṭa lived at least before the lifetime of Varāhamihira (146-74 BCE).

Bhāskara I (100-20 BCE)

I have already explained above that historians have mistakenly identified Someśvara's commentary as Bhāskara I's commentary. Since Someśvara records the date as Kaliyuga 3730 in his commentary on Āryabhaṭīyam, it has been wrongly assumed that Bhāskara I lived around 628-629 CE. In reality, Someśvara lived around 628-629 CE and not Bhāskara I. Therefore,

we must fix the date of Bhāskara I based on the internal evidence of his available works "*Mahābhāskarīyam*" and "*Laghubhāskarīyam*".

Interestingly, Sh. Bibhutibhushan Datta wrote an article titled "The Two Bhāskaras" in 1930.[11] He obtained two copies of "*Laghubhāskarīyam*" from Government Oriental Manuscripts Library, Madras. He says that there is a verse containing Śakābda correction in these manuscripts. The epoch used in that verse is the year 444 (139 BCE) of the Śaka era (583 BCE). Evidently, Bhāskara I must be dated after Śaka 444 (139 BCE). It may be noted that Śaṅkaranārāyaṇa places Bhāskara I after Varāhamihira and Bhāskara II (Śaka 1036-1105 = 453-522 CE) places him before Brahmagupta. Brahmagupta himself records that he was born in Śaka 520 (63 BCE) and wrote "*Brahmasphuṭasiddhānta*" in Śaka 550 (33 BCE). Brahmagupta also wrote "*Khandakhadyaka*" in Śaka 587 (3 BCE). Therefore, we can fix the date of Brahmagupta around 63 BCE-17 CE. Thus, Bhāskara I was a junior contemporary of Varāhamihira and senior contemporary of Brahmagupta. Accordingly, we can fix the date of Bhāskara I around 100-20 BCE.

It may be noted that ancient Indian astronomers have reset the epoch of Śaka era (583 BCE) and fixed the epoch in 78 CE considering the rare conjunction of Sun, Moon and Jupiter in Aries on 1st Apr 78 CE. Indian astronomers have introduced the concept of Ayanāṁśa in 78 CE for accurate astronomical calculations. Many astronomers like, Varāhamihira, Bhāskara, Kālidāsa, Mañjula, Brahmagupta and Haridatta proposed different epochs like Śaka 427 (156 BCE), Śaka 420 (163 BCE), Śaka 434 (149 BCE) Śaka 444 (139 BCE), Śaka 445 (138 BCE) and Śaka 587 (4 CE). Indian astronomers were in the quest for a unanimous epoch like 3101 BCE. Thus, they reset the epoch in Kali 3179, or 78 CE. It is evident that Indian astronomers of Bhāskara tradition of the 2nd century CE may have inserted a verse referring the epoch of Kaliyuga 3179 in *Mahābhāskarīyam* and *Laghubhāskarīyam* with an objective to make these works in line with the epoch of Kaliyuga 3179. This is the reason why we find the reference of Kaliyuga 3179 in *Mahābhāskarīyam* and *Laghubhāskarīyam*, even though Bhāskara I flourished before Kaliyuga 3179.

Govindaswāmi and Haridatta (Śaka 606) [23 CE]

Śaṅkaranārāyaṇa clearly indicates that Govindaswāmi was senior to Haridatta.[12] Historians wrongly fixed the date of Haridatta around 683 CE and the date of Govindaswāmi around 800-860 CE. There is no evidence to support this distorted chronology. Haridatta also followed Śakābda correction from Śaka 444 (139 BCE). Malayalam work Drikaraṇa of the 17th century indicates that Haridatta wrote his Grahachāranibandhana in Śaka 606 (23 CE). Thus, Haridatta probably lived in the beginning of the 1st century CE. Therefore, we can roughly conclude that Govindaswāmi, who wrote a commentary on *Mahābhāskarīyam*, lived around 70-0 BCE and, most probably, he was the pupil of Bhāskara I, whereas Haridatta lived around 10 BCE – 60 CE.

It may be noted that Drikaraṇa was written after 1600 CE. Indians gradually forgot the epoch of the Śaka era (583 BCE) by the 10th century CE. Therefore, the author of Drikaraṇa mistakenly assumes the epoch of Śaka era in 78 CE and calculates the corresponding Kali year.

The Revival of the Astronomical Siddhānta of Āryabhaṭa

Evidently, Bhāskara I (100-20 BCE) was the first to revive the astronomy of Āryabhaṭīyam in the 1st century BCE. He first wrote a commentary on Āryabhaṭīyam. Thereafter, he wrote *Mahābhāskarīyam* to elaborate the Siddhānta of Āryabhaṭa. He also wrote *Laghubhāskarīyam*, which is an abridged version of *Mahābhāskarīyam*. Govindaswāmi and Haridatta of Kerala also contributed in establishing the Āryabhaṭa Siddhānta. Interestingly, Sundararāja, the author of Vākyakaraṇa-Vyākhyā, records that Haridatta introduced the Kaṭapayādi numeral system. Therefore, Āryabhaṭa III, the author of Mahārya-Siddhānta, who used Kaṭapayādi numerals, undoubtedly lived after Haridatta and before Bhāskara II.

How Historians Fixed the Date of Āryabhaṭa

Historians interpreted the verse "*Ṣaṣṭyabdānām ṣaṣṭir -yadā vyatītāḥ trayaśca yugapādāḥ*" as Āryabhaṭa wrote Āryabhaṭīyam in Kaliyuga 3600, i.e., 499 CE, when he was twenty-three years old. This interpretation is chronologically impossible because Varāhamihira lived around 146-72 BCE and Bhāskara I lived around 100-20 BCE, as explained above.

Varāhamihira refers to Āryabhaṭa in his Pañchasiddhāntikā, whereas Bhāskara I wrote a commentary on Āryabhaṭīyam.

Historians date Varāhamihira around 505-589 CE and Bhāskara I around 522 CE or 628 CE. For the sake of argument, even we agree with this distorted chronology, we cannot convincingly establish that Āryabhaṭa wrote Āryabhaṭīyam in 499 CE.

1. Bhāskara I states that a considerably long time had elapsed since the time of Āryabhaṭa. "*Kāle Mahati*" can only be used if there is a gap of more than 1000 years. Śaṅkaranārāyaṇa also elaborates it as "*Mahati Kālāntare*".[13] If Bhāskara I was born twenty-five to seventy-five years after Āryabhaṭa, how can he say "*Kāle Mahati*"?
2. Varāhamihira quoted Āryabhaṭa and his disciple Lāṭadeva. He also used the verb "*Jagāda*" in remote past tense that cannot be used for a contemporary person. Kalidāsa wrote Jyotirvidābharaṇam in Kaliyuga 3068 (34 BCE) and referred to Varāhamihira as his senior contemporary. Therefore, Varāhamihira cannot be dated around 505-589 CE.
3. Āryabhaṭa had no knowledge of the epoch of Kaliyuga or the epoch of Śaka era. He only referred to the epoch of the Mahābhārata War (3162 BCE).
4. Aśmaka Kingdom and the city of Kusumapura did not exist after 1600 BCE, as already explained. How can we establish the existence of Aśmaka janapada around 450-550 CE?
5. Śankaravarman of Ṣaḍratnamālā states "Āryabhaṭa's treatise gave well accurate results in the Kali age but it became inaccurate in the Kali year 3623 (522 CE)" [*Āchāryāryabhaṭa-praṇīta-karaṇam prāyas sphuṭam tat Kalau, "Gotrottuṅga"mitābdake vyabhicharan brahmādi-siddhāntake….."*]. If Āryabhaṭa wrote Āryabhaṭīyam in 499 CE, how did it become inaccurate in 522 CE?

Evidently, we cannot fix the date of Āryabhaṭa around 499 CE. Let us survey the commentaries written on Āryabhaṭīyam to find out how the verse "*Ṣaṣṭyabdānām ṣaṣṭir-yadā vyatītāḥ trayaśca yugapādāḥ*" has been interpreted. Bhāskara I (100-20 BCE), Prabhākara (200-300 CE?), Someśvara (628 CE), Sūryadeva Yajvā (1191 CE), Parameśvara (1431 CE),

Yellaya (1480 CE), Nīlakantha Somasutvan (1450-1550 CE), Raghunātha Rājā (1597 CE), among others, commented on Āryabhaṭīyam. We can categorize these commentaries into two groups:

1. Ancient commentaries (Bhāskara I, Prabhākara and Someśvara)
2. Later commentaries (from the time of Sūryadeva Yajvā onwards).

Ancient Commentaries on Āryabhaṭīyam

Bhāskara I, Prabhākara and Someśvara wrote commentaries on Āryabhaṭīyam but at present, only Someśvara's commentary is available. He quoted Bhāskara I and Prabhākara. According to Bhāskara I and Someśvara:

"ṣaṣṭyabdānāṃ ṣaṣṭiḥ । ṣaṣṭiḥ abdāḥ ṣaṣṭiguṇāḥ iti arthaḥ । yadā vyatītāḥ । yadā yasmin kāle, vyatītāḥ vyatikrāntāḥ । trayaḥ ca yugapādāḥ । yugasya pādāḥ yugapādāḥ, te ca yadā trisaṅkhyāḥ vyatītāḥ । tryadhikāḥ viṃśatiḥ abdāḥ । tribhiḥ adhikāḥ tryadhikāḥ viṃśatiḥ abdāḥ । tadā । tasmin kāle । mama janmanaḥ atītāḥ । etat eva ācāryāryabhaṭaḥ śāstravyākhyānasamaye vā pāṇḍuraṅgasvāmi-lāṭadeva-niśaṅku-prabhṛtibhyaḥ provāca । atha atra idam praṣṭavyam ã asya vyākhyānam kim upakaroti iti? ucyate ã anena atītena kālena parijñātena sukham ādityādīnām kālaḥ atītaḥ anāgataḥ vā paṭhyate । atha ca sampradāyāvicchedāt vyatītaḥ kālaḥ vijñāyate । na etat asti । anabhidhāne bahu atra smaraṇīyam । trayāṇām yugapādānām varṣasaṅkhyā śūnyāmbarākāśaviyadvedayamāgnayaḥ [3240000] । gatam ca kaliyugasya । ekasya abhidhāne etāvataḥ tāvat sampradāyāvicchedāt araḥ na kartavyaḥ । kintu ācāryajanmakālāvadheḥ yaḥ uttaraḥ kālaḥ asya eva sampradāyāvicchedaḥ adhigantavyaḥ । anyat ca "ṣaṣṭyabdānām ṣaṣṭiḥ" iti asya abhidhāne prayojanam abhidhāsyate । ayam asya abhiprāyaḥ ã kṛtayugādeḥ ahargaṇaḥ sādhyaḥ । anyathā kṣepaḥ śaśyuccapātayoḥ jāyate iti । kṛtayugādeḥ punar ahargaṇe kriyamāṇe śaśyuccapātayoḥ na eva kṣepaḥ । "budhāhnyajārkodayāt ca laṅkāyām" [gītikāí, 4] iti budhādiḥ ahargaṇaḥ divasavāraḥ । idānīm tu laghugaṇitavyavahārārtham kaliyugāhargaṇaḥ kriyate…"

The summary of the above Sanskrit text: "ṣaṣṭyabdānām ṣaṣṭiḥ" means 60 x 60 = 3600 years. Thus, 3600 years and three Yugapādas had elapsed when Āryabhaṭa was born. The question is: how can three Yugapādas be only 3600 years? Since the old tradition of the time of

Āryabhaṭa is not existing today (Sāmpradāya-viccḥedāt), we should not consider 3600 years. In fact, total 3240000 (1080000 x 3) years had elapsed up to the beginning of Kaliyuga. If so, what is the objective of the reference of 3600 years (ṣaṣṭyabdānām ṣaṣṭiḥ)? In all probability, Āryabhaṭa indicates that Ahargaṇa must be calculated from the epoch of the introduction of the cycle of sixty years. Today, we simply calculate Ahargaṇa from the beginning of Kaliyuga.

Nīlakantha Somasutvan quotes Haridatta in his commentary. Haridatta interprets the verse, "When sixty times sixty years and three Yugapādas had elapsed, twenty-three years of my age have passed since then". Evidently, ancient commentators did not say that 3600 years have elapsed starting from Kaliyuga but they roughly indicate that three Yugapādas consisting of 3600 years have elapsed. Therefore, Ahargaṇa must be calculated from the epoch of the introduction of the cycle of sixty years and not from the epoch of Kaliyuga. It may be noted that Mayāsura was the first who introduced the cycle of sixty years around 6778 BCE when Jupiter was in Aries.

Later Commentaries on Āryabhaṭīyam

Evidently, later commentators clearly interpreted that 3600 years elapsed from Kaliyuga or the Mahābhārata War because they believed in the Mahāyuga cycle of 4320000 years.

The Real Meaning of "ṣaṣṭyabdānām ṣaṣṭiḥ"

It may be noted that ancient Indians followed a Yugapāda of 1200 years in ancient times. During the pre-Mahābhārata era, the concept of Mahāyuga (4320000 years) and Kalpa (4320000000 years) was introduced. Since Indian astronomers of the post-Mahābhārata era followed these cycles of millions of years, the commentators of Āryabhaṭīyam could not understand the true meaning of *"ṣaṣṭyabdānām ṣaṣṭiḥ"*. Ancient commentators like Bhāskara I, Haridatta and Prabhākara lived before 499 CE, or very close to 499 CE, and they did not say that 3600 years had elapsed since the beginning of Kaliyuga. They simply speculated that the objective of *"ṣaṣṭyabdānām ṣaṣṭiḥ"* is to calculate Ahargaṇa from the epoch of Kritayugānta (6778 BCE).

In fact, Āryabhaṭa simply says that 3600 years and three Yugapādas had elapsed just before the Mahābhārata War ("*Bharatāt purvam*"). Evidently, Āryabhaṭa considers an ancient epoch of 6773-6772 BCE for "Ahargaṇa". Seemingly, Ancient Brahma Siddhānta introduced the cycle of twelve years or sixty years in 6773 BCE. The tradition of Simhastha Kumbha (Jupiter in Leo) of Ujjain and Nasik is the oldest because the first twelve-year cycle commenced when Jupiter entered Kanyā Rāśi (Virgo) and ended when Jupiter was in Simha Rāśi (Leo). Thus, 6773 BCE was the Prabhava Saṁvatsara in Brahma Siddhānta, whereas 6777 BCE was the Prabhava Saṁvatsara in Mayāsura's Sūrya Siddhānta. Āryabhaṭa refers to the epoch of 6773 BCE and says that sixty cycles of sixty years have elapsed in 3173 BCE. Āryabhaṭa indicates the commencement of the Kaliyuga at midnight on 5th Mar 3173 BCE, Chaitra Śukla Pratipadā, Guruvāra, in the 1st year of the sixty-year cycle, i.e., Prabhava Saṁvatsara, when Jupiter was in Aries. I have already established, based on the Aihole inscription, that the Mahābhārata War took place in 3162 BCE. Thus, Āryabhaṭa says that he was born in 3173-3172 BCE (when 3600 years elapsed from the epoch of 6773-6772 BCE) and wrote Āryabhaṭīyam in 3150-3149 BCE (when he was 23 years old). According to Āryabhaṭa, the first year of sixty-year cycle commences when Jupiter enters Aries. Jupiter was in Aries in the year 3173-3172 BCE. Thus, Āryabhaṭa indicates that the fourth Yugapāda commenced on Chaitra Śukla Pratipadā, Guruvāra, at midnight on 5th Mar 3173 BCE. The day of 5th Mar 3173 BCE was Thursday considering the epoch of Mayāsura's Sūrya Siddhānta, i.e., 22nd Feb 6778 BCE, Sunday.

The Chronology:

1.	Kritayugānta and the beginning of Tretā Yuga.	6777 BCE
2.	Mayāsura wrote Sūrya Siddhānta.	22nd Feb 6778 BCE
3.	Paitāmaha or Brahma Siddhānta introduced the 60-year cycle.	6773 BCE
4.	The duration of Tretā Yuga (1200 years) and the introduction of the 60-year cycle and the Saptarṣi calendar in 6777 BCE.	6777 – 5577 BCE

5.	The duration of Dvāpara Yuga (2400 years).	5577 – 3177 BCE
6.	The birth of Āryabhaṭa.	3173 BCE
7.	The commencement of the fourth Yugapāda or Kaliyuga.	5th Mar 3173 BCE
8.	The date of the Mahābhārata War.	3162 BCE
9.	Āryabhaṭa wrote Āryabhaṭīyam.	3150 BCE

The Internal Evidence

Āryabhaṭa mentions the positions of Lanka and Ujjayinī. He states:

स्थलजलमध्याल्लङ्का भूकक्ष्याया भवेच्चतुर्भागे।
उज्जयिनी लङ्कायाः पञ्चदशांशे समोत्तरतः ॥[14]

"From the centers of the land and water, at a distance of one-quarter of the Earth's circumference, lies Lanka; and from Lanka at a distance of one-fifteenth of the Earth's circumference, exactly northwards, lies Ujjayinī." Thus, Āryabhaṭa clearly indicates that the latitude of Ujjayinī is 24 degrees (360/15).

Brahmagupta also records the same fact in his Brahmasphuṭa Siddhānta "लङ्कोत्तरतो अवन्ती भूपरिधेः पञ्चदशभागे।".[15] Sūryadeva Yajvā also says "उज्जयिनी लङ्कायाः पञ्चदशांशे समोत्तरतः". Varāhamihira also states "When the Sun is at the end of Gemini, it revolves 24 degrees above the horizon of the gods; and at Avanti, it is then exactly overhead at midday." Raghunātha Rājā, a commentator on *Āryabhaṭīyam* also refers to the reading of "पञ्चदशांशे". Thus, many Indian astronomers agree with Brahmagupta and take the latitude of Ujjayini as 24 degree. But some astronomers also refer to another reading of Āryabhaṭa's śloka as "तच्चतुरंशे समोत्तरतः". Later commentators of *Āryabhaṭiyam* refer to both the readings but prefer to uphold the reading "पञ्चदशांशे". Seemingly, the reading "पञ्चदशांशे समोत्तरतः" (360/15) is more ancient than the reading "तच्चतुरंशे समोत्तरतः" (90/4).

It appears that later Indian astronomers edited the verse from "पञ्चदशांशे समोत्तरतः" to "तच्चतुरंशे समोत्तरतः". In fact, Earth's obliquity (tilt of the axis) changed from 24 degrees to 23.5 degrees around 1500 CE. Earth's obliquity was around 24 degrees (24.13 degrees to 24 degrees)

around 6778-2800 BCE. During the Mahābhārata period, Earth's obliquity was also around 24.02 degrees. Since Āryabhaṭa belongs to the period of the Mahābhārata, he indicates the latitude of Ujjayinī as 24 degrees. According to Milutin Milankovich, Earth's obliquity varies between 22.1 degrees and 24.5 degrees in a cycle of 40,000 years. Thus, the obliquity of the Earth varied from 6778 BCE to 1500 CE.

	Earth's Obliquity
6778 BCE	24.13 degrees
5000 BCE	24.10 degrees
4000 BCE	24.06 degrees
3162 BCE	24.02 degrees
2800 BCE	24 degrees
2000 BCE	23.55 degrees
1000 BCE	23.49 degrees
0 CE	23.41 degrees
1000 CE	23.34 degrees
1500 CE	23.30 degrees

Evidently, later Indian astronomers found that the latitude of Ujjayinī is less than 24 degrees. Therefore, they changed the reading of the verse of Āryabhaṭīya from "पञ्चदशांशे समोत्तरतः" to "तच्चतुरंशे समोत्तरतः". In fact, the original reading was "पञ्चदशांशे समोत्तरतः" because Āryabhaṭa lived around 3173-3100 BCE and Earth's obliquity was 24.02 degrees. In all probability, the latitude of Mahakāleśvara Temple, Ujjayinī, was also 23.52 degrees during the Mahābhārata era. Today, the latitude of Mahakāleśvara Temple, Ujjayinī, is 23.11 degrees.

While giving inclinations of the orbits of planets, Āryabhaṭa unambiguously mentions that the greatest declination of the Sun is 24°. Evidently, the greatest declination of the Sun is the obliquity of the ecliptic. Undoubtedly, Earth's obliquity was 24 degrees during the lifetime of Āryabhaṭa.

भापक्रमो ग्रहांशाः शशिविक्षेपोऽपमण्डलात् झार्धम्।
शनि–गुरु–कुज ख–क–गार्ध, भृगु–बुध ख, स्चाङ्गुलो घहस्तो ना।।[16]

The Disciples of Āryabhaṭa

Lāṭadeva, Pāṇḍuraṅga Swāmi and Niśaṅku were the pupils of Āryabhaṭa. During the time of Āryabhaṭa, Paitāmaha (Brahma), Vasiṣṭha, Sūrya, Romaśa (Romaka) and Pauliśa Siddhāntas dominated Indian astronomy. Āryabhaṭa presented his new research following the basics of Paitāmaha but his approach was extremely radical. Therefore, none of the followers of Paitāmaha Siddhānta accepted the theory of Āryabhaṭa.

Lāṭadeva and His Sūrya Siddhānta (3101 BCE)

Lāṭadeva (3050-3070 BCE) was the pupil of Āryabhaṭa (3173-3100 BCE). He borrowed the sine table, the concept of dual-epicycle (Manda and Śīghra) and the concept of midnight reckoning of the day from Āryabhaṭa and recomposed the Sūrya Siddhānta of Maya. Lāṭadeva was the first who introduced the concept of expunging one year from the cycle of sixty years. He considered the beginning of Prabhava Saṁvatsara in the year 3128-3127 BCE, considering the position of Jupiter in the Prathama pāda of Dhaniṣṭhā Nakśatra on 21st Nov 3128 BCE, but he disagreed with the traditional epoch of the beginning of a Yuga. He opined that the Yuga must commence from a great conjunction of planets. Therefore, he established that Kaliyuga commenced at midnight between 17th and 18th Feb 3101 BCE. In all probability, Lāṭadeva studied in the city of Kusumapura of Aśmaka janapada. He had not only recomposed Maya's Sūrya Siddhānta and Romaka Siddhānta but also wrote a commentary on the Pauliśa Siddhānta. Seemingly, the Pauliśa Siddhānta originated from Pulaha or Pulastya Siddhānta but was influenced by the Sūrya, Romaka and Vasiṣṭha Siddhāntas.

Lāṭadeva understood the importance of Āryabhaṭa's Siddhānta for accurate astronomical calculations. He adopted a reformist approach rather than radical approach. In all probability, Lāṭadeva personally observed the conjunction of all planets on 17th/18th Feb 3101 BCE and recompiled Maya's Sūrya Siddhānta considering the epoch of Kaliyuga in 3101 BCE. According to Lāṭadeva, there are two pole stars, one at

Northern celestial point and another at Southern celestial point.[17] Thuban and Alpha Eridani (Achernar) were the North pole star and the South pole star respectively around 3101 BCE.

Initially, Indian astronomers preferred the traditional Rishi Siddhāntas rather than the Siddhāntas updated by astronomers. They had great respect for ancient Paitāmaha and Vasiṣṭha Siddhāntas. They did not accept the radical approach of Āryabhaṭa and Lāṭadeva. But later Indian astronomers realized the importance and the accuracy of Sūrya Siddhānta during the 2nd century BCE. Thus, later Indian astronomy gradually evolved under the influence of Sūrya Siddhānta of Lāṭadeva. This influence of Sūrya Siddhānta led to the introduction of the epoch of 78 CE by the Indian astronomers.

Vriddhāryabhaṭa's Mahārya Siddhānta

Vriddhāryabhaṭa Siddhānta and Pārāśara Siddhānta had been established in the beginning of Kaliyuga as recorded in the text of Mahāryabhaṭa Siddhānta (*Īṣadyāte Kalau yuge*). Vriddhāryabhaṭa (Mahārya Siddhānta) had proposed a correction in calculation of Saptarṣi cycles and stated that there are 1599998 cycles of the Saptarṣis in a Kalpa. Evidently, a school of Paitāmaha Siddhānta propounded 1600000 cycles in a Kalpa. According to Paitāmaha Siddhānta, Yugas (Kṛta, Tretā, Dvāpara or Kali) must commence from the seventy-seventh year of .It is well known that ancient Indians followed the cycle of Saptarshi Yuga (2700 years). Vriddharyabhata Siddhanta mentioned that there are 1599998 cycles of Saptarshi in a Kalpa and reduced 2 cycles. Evidently, ancient siddhanta had 1600000 cycles in a Kalpa. Aryabhata says that Dwapara Yuga ended on 5th Mar 3173 BCE and thereafter, Mahabharata war occurred. The date given in the Aihole Insr. seems to be the most ancient recorded date of Mahabharata. It appears that Indian astronomers refixed the epoch of Kaliyuga in 3101 BCE considering the conjunction because astronomical calendar cannot have an arbitrary epoch. It must start from a conjunction of Sun, Moon and planets Initially, a Yuga of 1200 years was introduced around 6777 BCE. Later, the concept of differential duration of Yugas came into existence, as the Dvāpara Yuga was equal to 2400 years and the Kaliyuga will have the duration of 1200 years. During the period of Dvāpara Yuga, these Yuga

lengths had been increased in multiples of 432000 years. But it was clearly stated in the Mahābhārata that the Dvāpara Yuga had 2400 years and the Tretā Yuga ended with the death of Rāma. Thus, we have clear indications of the end of Dvāpara Yuga and the beginning of Tretā Yuga. Since the Dvāpara Yuga had the duration of 2400 years, most probably, the Tretā Yuga ended around 5577 BCE. Thus, Tretā Yuga had only 1200 years. There was a divergence of opinion regarding the beginning of Kaliyuga but all indicate the beginning of Kaliyuga in the 32nd century BCE (from 3176 BCE to 3101 BCE). When the Yudhiṣṭhira era or the epoch of the Mahābhārata War (3162 BCE) was discontinued around 118 BCE (3044th year), as indicated by Kālidāsa in his Jyotirvidābharaṇam, the epoch of Kaliyuga (3101 BCE) of Sūrya Siddhānta became popular among Indian astronomers.

Most probably, Vriddhāryabhaṭa lived before 3176 BCE. Another Āryabhaṭa (Āryabhaṭa III) recompiled the ancient Vriddhāryabhaṭa Siddhānta in his treatise "Mahārya-Siddhānta" around 100-500 CE.

Pārāśara Siddhānta

There were many Pārāśaras. Parāśara I, the son of Śakti and the grandson of Vasiṣṭha, lived around 11200 BCE. He was the author of Rigvedic hymns[18] and the founder of the Pravara gotra of Pārāśara. Parāśara I was the father of Veda Vyāsa (11180-11050 BCE). Pārāshara II was the father of Vyāsa of the Mahābhārata era and lived around 3280-3200 BCE. He was the author of Pārāśara Siddhānta. A manuscript of Pārāśara Siddhānta is available in the Bhandarkar Oriental Research Institute, Pune. This manuscript is incomplete and only first two chapters are available. It starts with the definition of Kalpa period (4320000000 years) and gives the revolutions of planets in a Kalpa. Evidently, this manuscript of Pārāśara Siddhānta clearly follows the tradition of Siddhantic astronomy. Most probably, Pārāśara of the Mahābhārata era, a senior contemporary of Vriddhāryabhaṭa, was the author of Pārāśara Siddhānta. Mahāryabhaṭa Siddhānta mentions that Pārāśara and Vriddhāryabhaṭa Siddhāntas became popular in the beginning of Kaliyuga. Most probably, Pārāśara III also composed Pārāśara Smriti, which became popular in the beginning

of Kaliyuga.

Sh. RN Iyengar painstakingly collected the quotations and fragments of Pārāśaratantra from various astronomical texts and claimed that Pārāśaratantra was the original treatise of Pārāśara of the Mahābhārata era. He established the date of Pārāśaratantra around 1350-1130 BCE. In all probability, a descendant of Pārāśara gotra or a disciple of Pārāśara Siddhānta composed Pārāśaratantra around 1350-1130 BCE. Thus, Pārāśara Siddhānta was written around 3280-3200 BCE, whereas Pārāśaratantra was composed around 1350-1130 BCE. Therefore, Pārāśara of the Mahābhārata era was not the author of Pārāśaratantra.

There is another text called "Brihat Pārāśara Horāśāstra" on astrology. It refers to Rāma, Krishna and Buddha incarnations of Vishnu. Interestingly, this Horāśāstra predicts that a great king named Śālivāhana (7th century BCE) will be born.[19] Varāhamihira (146-72 BCE) quotes Pārāśara's astrological statements in his Brihat Saṁhitā. It is possible that Pārāśara III of the Mahābhārata era was the original author of Brihat Pārāśara Horāśāstra but it was recompiled and enlarged by a descendant of Pārāśara gotra, after the reign of King Śālivāhana, and before the lifetime of Varāhamihira, around 600-300 BCE.

Seemingly, the Pārāśara Siddhānta became popular after the Mahābhārata era. Gradually, Indian astronomers understood the accuracy of Sūrya Siddhānta and started following the Sūrya Siddhānta around the 2nd century BCE. This may be the reason why the epoch of Yudhiṣṭhira was abandoned in the 3044th year, as mentioned in Jyotirvidābharaṇam of Kālidāsa. Evidently, the epoch of Yudhiṣṭhira era (3162 BCE) was replaced by the epoch of the Kaliyuga era (3101 BCE) in the 2nd and 1st centuries BCE. Kalidāsa gives the date of Jyotirvidābharaṇam in the epoch of Kaliyuga era. Indian astronomers of the first century introduced the epoch of Śakānta (78 CE), considering the perfect conjunction of Sun, Moon and Jupiter on 1st Apr 78 CE, Chaitra Śukla Pratipadā.

9

The Chronology of Ancient Indian Dynasties and Kingdoms (14500-3162 BCE)

The chronologically recorded history of ancient India begins with the reign of King Svāyambhuva Manu. The kings of the Manu dynasty were the earliest known royal family of ancient India. They reigned over the Brahmāvarta Kingdom. The chronology of ancient India can be classified into the following six periods:

- Proto-Vedic Period (16000-14500 BCE)
- Vedic Period (14500-10500 BCE)
  - Ādiyuga : The era of early Manu dynasty (14500-14000 BCE)
  - Devayuga: The Vedic Period (14000-11000 BCE)
  - The Great Flood in Vaivasvata Manu's Kingdom (11200 BCE)
  - Vedic Sarasvati River lost in the Thar Desert (10950 BCE)
  - Later Rigvedic Period (11500-10500 BCE)
  - Post-Vedic Sarasvati River started flowing westwards (10950-10000 BCE)
- Post-Vedic Period (10500-6777 BCE)
  - The submergence of the city of Dvāravatī (9400-9300 BCE)
  - The recompilation of Avestā, i.e., Asuraveda (7000 BCE)
  - The epoch of the end of the 28th Krita Yuga (6778-6777 BCE)
- The 28th Tretā Yuga (6777-5577 BCE)
  - The Rāmāyaṇa era (5677-5577 BCE)

- The birth date of Sri Rāma (3rd Feb 5674 BCE)
- The 28th Dvāpara Yuga (5577-3176 BCE)
    - The epoch of Yudhiṣṭhira's Rājasūya and his coronation in Indraprastha (3188 BCE)
    - The epoch of the Mahābhārata war and Yudhiṣṭhira era (3162 BCE)
- The 28th Kaliyuga (3176 BCE onwards) [Mahābhārata]
    - The epoch of the 28th Kaliyuga (3173 BCE) [Āryabhaṭa]
    - The epoch of the 28th Kaliyuga (3101 BCE) [Lāṭadeva's Sūrya Siddhānta]
    - The submergence of Dwārakā city of the Mahābhārata era in a tsunami (3126 BCE)
    - The disappearance of Post-Vedic Sarasvati and Dṛṣadvati Rivers (3000 BCE)

Proto-Vedic Period (16000-14500 BCE)

Brahma I, the founder of knowledge-based Vedic society, was the progenitor of the Manu Dynasty. His son, Svāyambhuva Manu, expanded Brahmāvarta Kingdom and became the first emperor of ancient India. All Prajāpatis of smaller kingdoms accepted the supremacy of the Manu Dynasty in the beginning of early Vedic period. The traditional chronology of Yugas, and the record of the elapsed 1837 Yugas from Svāyambhuva Manu to the epoch of the end of the 28th Krita Yuga (6778-6777 BCE), indicate the beginning of Ādiyuga (around 15962 BCE) and the dates of Brahma I (16000 BCE) and Svāyambhuva Manu (15962 BCE). But the genealogy of the descendants of Svāyambhuva Manu given in Purāṇas and the archaeoastronomical dates of Brihaspati (14000 BCE) and Viśvāmitra (13500 BCE) indicate the date of Brahma I to be around 14500 BCE. The astronomical evidence of the position of summer solstice in the middle of Dhaniṣṭhā Nakśatra (the beginning of the early Vedic New Year) also clearly indicates the lower limit of 14500 BCE. Since the earliest Vedic rituals and the five-year Yuga calendar were already established during the time of Brahma I, seemingly, the

evolution of these rituals and early Vedic calendar might have taken place in a period of 1500 years. Therefore, the early Vedic period from 16000 BCE to 14500 BCE may be named as "Proto-Vedic Period".

The marine archaeological research in the Gulf of Khambat finds strong evidence that supports the presence of human settlements in ancient India from at least 30000 BCE. The ancient Indians of the Gulf of Khambat region were making potteries and drying them in the sun around 30000-18000 BCE. From about 18000 BCE onwards, they appear to have succeeded in making fired pottery. According to scientific studies, Indian subcontinent had experienced semi-arid climate between 22000-16500 BCE. Monsoons became normal around 16500 BCE. The carbonised rice grains found in Sant Kabir Nagar district of Uttar Pradesh clearly indicate that rice was eaten on the eastern Ganga plains at least from 11000 BCE and the history of agriculture in India dates back to 16000 BCE.[1] The domestication of cattle also started almost at the same time. Interestingly, there was a strong connection between domestication of cattle, cultivation of crops and the evolution of a basic seasonal calendar. Thus, the ancient Indians had already learnt the basics of agriculture, cattle-rearing and the seasonal calendar by 16000 BCE, which laid strong foundations for the relatively advanced civilisation of Proto-Vedic Period.

Ādiyuga: The Era of Early Manu Dynasty (14500-14000 BCE)

Early Vedic period formally begins with the reign of Svāyambhuva Manu or Manu I, son of Brahma I. Many Prajāpatis like Saptarṣis, Dakśa, Ruchi and more, already existed during the reign of Manu I. Svāyambhuva Manu married Śatarūpā and had two sons, Uttānapāda and Priyavrata, and three daughters, Ākūti, Devahūti and Prasūti. Ākūti married Rishi Ruchi, Devahūti married Rishi Kardama and Prasūti married Dakśa Prajāpati. Since Brahma I came to be known as the creator, Puranic historians imagined Prajāpatis and Saptarṣis as Mānasaputras of Brahma I and Śatarūpā as his daughter. In reality, Brahma I was a great Rajarshi of the early Vedic period and not the creator. Therefore, he was not the father of Śatarūpā. He did not create man (Manu I) and woman (Śatarūpā). Many Rishis and Prajāpatis of the Proto-Vedic period existed during the lifetime of Brahma I and Manu I.

The Saṁvatsara (New Year) of early Vedic calendar used to commence from summer solstice. Traditionally, Vedic New Year had commenced when moon was in Dhaniṣṭhā Nakśatra on Māgha Śukla Pratipadā. Considering the position of summer solstice in Dhaniṣṭhā Nakśatra, we can fix the lifetime of Brahma I around 14500 BCE. The chronology of Early Manu Dynasty:

		In CE
1.	Brahma	14500 BCE
2.	Svāyambhuva Manu	14460 BCE
3.	Uttānapāda and Priyavrata (Brothers)	14420 BCE
4.	Uttama and Dhruva (Brothers)	14390 BCE
5.	Agnīdhra (Son of Priyavrata)	14390 BCE
6.	Nābhi	14350 BCE
7.	Riṣabha	14310 BCE
8.	Bharata I	14275 BCE

Nābhi or Nābha (Ajanābha?) was a great king. His kingdom was known as Ajanābha Varṣa. It came to be known as Bhārata Varṣa during the reign of Bharata I, grandson of King Nābhi.

King Prithu, Son of Vena

Śatapatha Brāhmaṇa tells us that King Prithu was the first who was anointed by Rishis.[2] Seemingly, King Prithu was a senior contemporary of Indra I (14000 BCE). Vāyu Purāṇa refers to Prithu as Ādirāja (the first king). The Earth, i.e. Prithvi, is named after King Prithu in Sanskrit. Prithu was the son of King Vena. According to Bhāgavata Purāṇa, Vena was a descendant of Dhruva. The genealogy of Vena and Prithu as given in Purāṇas:

		In CE
1.	Dhruva – wife Bharaṇī	14390-14340 BCE
2.	Utkala and Vatsara (Son of Bharaṇī)	14340-14300 BCE
3.	Puṣparṇa (Son of Vatsara)	14300-14270 BCE
4.	Vyuṣṭha	14270-14230 BCE
5.	Sarvatejas	14230-14200 BCE

6.	Chakśu – wife Ākūti	14200-14170 BCE
7.	Utsuka	14170-14130 BCE
8.	Aṅga	14130 -14100 BCE
9.	Vena	14100-14060 BCE
10.	**Prithu**	14060-14000 BCE
11.	Vijitāśva	14000-13970 BCE
12.	Havirdhāna	13970-13930 BCE
13.	Varṣada	13930-13900 BCE
14.	Prachetas (10 sons of Varṣada)	13900 BCE

Aṅga married Sunītā, daughter of Mrityu. Vena, son of Aṅga succeeded his father. He neglected the duty of performing Vedic rituals. Rishis removed Vena and anointed Prithu, his son. Thus, Prithu was anointed by rishis and had the title of Chakravarti. His capital was the city of Prithūdaka, i.e., Pehowa in Haryana. His wife was Ārchi and he had five sons: Vijitāśva, Haryākśa, Dhūmrakeśa, Vrika and Draviṇa.

King Prithu performed ninety-nine Aśvamedha Yajñas but could not complete the 100th because Indra I captured the ritual horse and challenged him. King Prithu had to abandon the 100th Aśvamedha. Later, Indra I successfully performed 100 Aśvamedhas and came to be known as "Śatakratu". According to legends, four Sanatkumāras (Sanaka, Sanātana, Sanandana and Sanatkumāra), Mānasaputras of Brahma, were contemporaries of King Prithu.

The Mahābhārata gives a different genealogy of King Prithu. Seemingly, there were two Prithus. Prithu I was the descendant of Dhruva of Manu Dynasty, whereas Prithu II was the descendant of Vishnu and Bhrigu clan. Vena Bhārgava was the father of Prithu II who wrote two hymns of Rigveda.[3] Interestingly, Vena is the deity of a Rigvedic hymn written by Rishi Vena Bhārgava.[4] Prithu II was the son of Rishi Vena Bhārgava or Vena II. Vena Bhārgava, and his son Prithu II, were probably contemporaries of Śukrāchārya. Atibala, the grandfather of Prithu II was the first Bhārgava who founded a kingdom of Bhārgava Kśatriyas. It appears that Atibala was a contemporary of Haihaya King Mahiṣmān, who founded the city of Māhiṣmatī, and he became an ally of Haihayas.

Later, Bhārgava King Vena, or Prithu, supported Nāgas. Karkoṭa Nāga conquered Māhiṣmatī from Haihayas. Arjuna Kārtavīrya defeated Karkoṭa Nāga and re-established the rule of Haihayas in Māhiṣmatī. Since Bhārgavas supported Nāgas, Arjuna Kārtavīrya and his sons persecuted them. The genealogy of Vena Bhārgava and Prithu II:

		In CE
1.	Vishnu I	14000 BCE
	…………	
2.	Virāja	11500-11450 BCE
3.	Kīrtimat	11450-11400 BCE
4.	Kardama	11400-11370 BCE
5.	Anaṅga	11370-11330 BCE
6.	Atibala	11330-11300 BCE
7.	Vena II	11300-11250 BCE
8.	Prithu II	11250-11200 BCE

Devayuga: The Vedic Period (14000-11000 BCE)

The chronological history of Devayuga or the Vedic period begins from the rise of Ādityas. Aditi, daughter of Dakśa Prajāpati and wife of Rishi Kaśyapa, was the mother of Ādityas. Rigveda indicates that Aditi had eight sons, known as Ādityas.[5] The eighth son was Mārtāṇḍa, or Sun. Seemingly, early Vedic solar calendar had only seven Rāśis. Therefore, Rigveda refers to seven Ādityas or Seven Rāśis. Each Rāśi had four Nakśatras. Later, Vedic rishis introduced the concept of twelve Rāśis. Thus, the number of Ādityas increased from seven to twelve. Taittirīya Āraṇyaka gives the names of the eight Ādityas as Mitra, Varuṇa, Dhātā, Aryamā, Aṅśa, Bhaga, Indra and Vivasvān.[6]

Brihadāraṇyaka Upaniṣad refers to thirty-three Devas (eight Vasus, eleven Rudras, twelve Ādityas, Indra and Prajāpati).[7] Evidently, it does not include Indra into the list of twelve Ādityas. Cḥāndogya Upaniṣad refers to Vishnu as Āditya. Bhagavad Gītā also indicates the same (*Ādityānāmaham Vishnuḥ*). According to Purāṇas, the twelve Ādityas were: Vishnu, Aryamā, Indra, Tvaṣṭā, Varuṇa, Dhātā, Bhaga, Savitā, Vivasvān, Aṅśa, Mitra and Pūṣan.

Indra I, the son of Rishi Kaśyapa and Aditi, performed 100 Aśvamedha Yajñas and became the King of Devas. Brihaspati I (14025 BCE) was the Purohita of King Indra I.

Rudra I and Eleven Rudras (14010 BCE)

According to Rigveda, Rudra I was the father of Marut.[8] Maruts were his descendants. Vāyu was also one of the descendants of Marut. There is a divergence of opinion about the birth of Rudra I and eleven Rudras. Taittirīya Āraṇyaka mentions that Rudra I and Brihaspati I were the sons of Vyoma and his wife Bhūmi.[9] The Rāmāyaṇa, Harivaṁśa and Vāmana Purāṇa indicate that Rudras were the sons of Rishi Kaśyapa and his wife Surabhi or Aditi. Matsya Purāṇa and Vishnu Purāṇa state that Rudras were the sons of Brahma. Bhāgavata Purāṇa indicates Rudras were the sons of Sarūpā and Bhūta. Sarupā was a daughter of Dakśa. According to the Mahābhārata, Dharma was the father of Rudra and Maruts. Seemingly, there were many famous Rudras. Taittirīya Āraṇyaka is more authentic, being the oldest text. Therefore, Rudra I and Brihaspati I were the sons of Āṅgiras Rishi Vyoma.

Eight Vasus (14025 BCE)

Āpa, Dhruva, Soma, Dhara, Anila, Anala, Prathyūṣa, and Prabhāsa were known as the eight Vasus. The Rāmāyaṇa mentions that eight Vasus were the sons of Rishi Kaśyapa and Aditi, whereas the Mahābhārata describes them as the sons of Brahma or Manu. According to Padma Purāṇa, the eight Vasus were the sons of Dharma and his wife Vasu. The Mahābhārata indicates that eight Vasus were contemporaries of King Prithu.

The Aiḍa Dynasty: The Progeny of Manu and Iḍā (14050 BCE)

King Manu, a descendant of early Manu dynasty married Iḍā around 14050 BCE and their progeny was called Mānava or the Aiḍa Vaṁśa. Maitrāyaṇī Saṁhitā tells us that Manu offered ghee to the gods in Vedic Yajña. There appeared a marriageable beautiful girl named Iḍā.[10] Śatapatha Brāhmaṇa also gives a similar narrative and mentions that Iḍā was claimed by Mitra and Varuṇa but she preferred to live with King Manu. Interestingly, Taittirīya Brāhmaṇa states that Iḍā established three Agnis, Āhavanīya, Gārhaspatya and Anvāhāryapachana, for Manu.[11]

Evidently, Iḍā was the founder of the Vedic rituals around 14000 BCE. She was also known as Ghritapadī. Purāṇas mistakenly identified Iḍā and Ilā as identical. In fact, Iḍā was the wife of Manu, whereas Ilā was the daughter of Vaivasvata Manu. Vāyu Purāṇa mentions that the kings of Ikśvāku dynasty originated from the Aiḍa dynasty.[12]

ऐडमिक्ष्वाकुवंशस्य प्रकृतिं परिचक्षते ।
ऐडवंशेऽथ सम्भूताः तथा चेक्ष्वाकवो नृपाः ॥

Therefore, Iḍā cannot be identified with Ilā. The Manu dynasty also came to be known as the Aiḍa dynasty after 14000 BCE. The progeny of Iḍā was known as Aida.

The Date of Rigvedic Devatās

Though the devatā of the Rigveda indicates the subject of the hymn, most of the devatas of Rigveda were historic personalities.

Indra I (14000 BCE)

Indra is the devatā of 289 hymns out of 1028 hymns of Rigveda. There were many Indras. Indra I (14000 BCE) was the son of Aditi and Kaśyapa. His progeny also came to be known as Indra. He was the first to perform 100 Aśvamedha Yajñas. The Rigvedic legend of Indra, Vishnu and Emuśa or Varāha[13] is related to Indra I and Vishnu I. Indra II (13650 BCE) became the King of Devas and eliminated Asura King Vritra, son of Tvaṣṭā. Viśvarūpā, son of Prajāpati Tvaṣṭā, was killed by Indra II. Vritra wanted to avenge the death of his brother Viśvarūpā. Finally, Indra II killed Vritrāsura. There was also Indra III (11325 BCE), who killed Śaṁbara, the Asura king. Rigveda eulogises mainly these three Indras. Later, rain and drought have been personified as Indra and Vritrāsura respectively. Indra was also paired with Agni, Vāyu, Varuṇa, Marut, Pūṣan, Vishnu, Soma and Brihaspati in Rigveda.

Agni (14000 BCE)

Agni is the devatā of 218 hymns of Rigveda. He was also the son of Aditi and the brother of Indra I. Later, fire has been personified as Agni devatā.

King Pavamāna Soma (14000 BCE)

Pavamāna Soma was a contemporary of Brihaspati I, the Purohita of King Indra I. He abducted Tārā, wife of Brihaspati I, and had a son named Budha with her. King Puru I was the grandson of King Soma I and founded the early Puru dynasty. Soma is the devatā of all hymns of the ninth Mandala of Rigveda. He was also paired with Indra, Rudra and Agni in Rigveda. Seemingly, Soma was also a contemporary of Rudra and Agni.

The Chronology of Rigvedic Deities

	In CE
Sarasvati, wife of Brahma (Sarasvati River was named after her)	14500 BCE
Iḍā (wife of King Manu), Soma I, Indra I	14000 BCE
Mitra, Varuṇa, Rudra, Brihaspati or Brahmaṇaspati, Bhaga, Prajāpati etc.	14000 BCE
Uṣas (daughter of Prajāpati), Marut (Son of Rudra I)	13975 BCE
Tvaṣṭā, Dhātri, Āpas, Manyu (a descendant of Rudra I)	13700 BCE
Viśvakarmā I, Viśvarūpā and Vritrāsura (Sons of Tvaṣṭā)	13675 BCE
Indra II, Vishnu, Vāyu, Pūṣan, Sūrya or Sāvitri	13650 BCE
Aśvinī Kumāras and Ribhus	13650-13600 BCE

The Kings of Manu or Aiḍa Dynasty (14000-13400 BCE)

The Rāmāyaṇa indicates that Manu (14050 BCE) built the city of Ayodhyā.[14] Seemingly, the descendants of Manu or Aiḍa dynasty reigned in Ayodhyā after 14000 BCE. King Triśaṅku, a contemporary of Vasiṣṭha and Viśvāmitra, belonged to the Manu dynasty. Since the Ikśvāku dynasty, an offshoot of the Manu or Aiḍa dynasty, reigned over Ayodhyā for a long period, all Ayodhyā kings were referred to as Aikśvāka kings by the post-Vedic and Puranic scholars, though there existed Ayodhyā kings before the birth of Ikśvāku of the Manu Dynasty.

		In CE
	Manu and Iḍā	14050-14000 BCE
	(The descendants of Manu)	14000-13550 BCE
1.	Trivriṣṇa	13550-13530 BCE

2.	Tryāruṇa	13530-13500 BCE
3.	Satyavrata Triśaṅku	13500-13450 BCE
4.	Hariśchandra	13450-13400 BCE

Swārochiṣa and Uttama Manu (13400-13200 BCE)

Seemingly, many kingdoms of the descendants of Svāyambhuva Manu came into existence from Ketumāla (Bactria) in the West to Ayodhyā in the East. Muni Kaligandharva, probably a descendant of Manu, married Varūthinī and had a son named Swarochi. Swarochi had three wives and three sons namely, Vijaya, Merudanda and Prabhava. He also married Apsarā Mrigī. Swarochiṣa Manu was the son of Swarochi and Mrigī. He became a great emperor. Later, Uttama II (13200 BCE), a descendant of Uttama I, established himself as a powerful ruler.

Seemingly, a branch of Manu dynasty had migrated from Brahmāvarta to Gujarat region due to the rise of the Puru and Bharata dynasties. Tāpasa, Raivata, Chākśuṣa and Vaivasvata Manus reigned in the Saurashtra region.

		In CE
1.	Muni Kaligandharva (married Varūthinī)	13450 BCE
2.	Swarochi (married Mrigī)	13425 BCE
3.	Swarochiṣa Manu	13400 BCE
4.	Uttama Manu	13200 BCE
5.	Surashatra	13025 BCE
6.	Tāpasa Manu	13000 BCE
7.	Raivata Manu	12500 BCE
8.	Chākśuṣa Manu	12000 BCE
9.	Kaśyapa II	11325 BCE
10.	Vivasvān	11295 BCE
11.	Vaivasvata Manu	11275 BCE
12.	Ikśvāku	11250 BCE

The Early Puru (Paurava) Dynasty

Puru I, the grandson of Soma, was the founder of the early Puru dynasty,

around 13950-13925 BCE. His descendants had established many branches of the Puru dynasty.[15]

Duṣyanta-Bharata Branch of Purus (Kurukshetra region)

		In CE
	Soma I	14010-13980 BCE
	Budha I	13980-13950 BCE
1.	Puru I	13950-13925 BCE
2.	Janamejaya	13925-13900 BCE
3.	Prachīnavat	13900-13870 BCE
4.	Pravīra	13870-13840 BCE
5.	Manasyu	13840-13800 BCE
6.	Chārupāda or Vītamaya	13800-13770 BCE
7.	Sudyu or Śundhu	13770-13740 BCE
8.	Bahugava or Bahuvidha	13740-13710 BCE
9.	Saṁyāti	13710-13680 BCE
10.	Ahaṁyāti	13680-13650 BCE
11.	Raudrāśva I (Married to Apsarā Ghritāchī. Thus, he was a senior contemporary of Kuśanābha, the grandfather of Viśvāmitra)	13625-13600 BCE
12.	Riteyu	13600-13580 BCE
13.	**Rantināva**	13580-13550 BCE
14.	Sumati	13550-13500 BCE
15.	Rebhi	13500-13480 BCE
16.	**Duṣyanta**	13480-13450 BCE
17.	**Bharata Aśvamedha**	13450-13400 BCE

The Bharata Branch of Puru Dynasty

Bharata, son of Duṣyanta and Śakuntalā, was the founder of Bharata-Puru Dynasty.

		In CE
1.	**Bharata Aśvamedha**	**13450-13400 BCE**
2.	Bhārata Āśvamedha	13400-13380 BCE
3.	Suhotra	13380-13340 BCE
4.	Ajamīḍha I	13340-13300 BCE
5.	Kaṇva, Medhātithi and Kaṇvāyanas	13300 BCE onwards

Other Branches of the Puru Dynasty

Purukutsa-Trasadasyu branch of Purus (Sapta-Sindhu region)		
1.	Durgaha (a descendant of King Puru I)	13550-13530 BCE
2.	Girikśit	13530-13500 BCE
3.	Purukutsa (wife Narmadā)	13500-13470 BCE
4.	Trasadasyu	13470-13430BCE
5.	Kuruśravaṇa	13430-13380 BCE
Vītahavya branch of Purus (Māhiṣmatī region)		
1.	Vītahavya	13650-13600 BCE
2.	Śaryāti I	13625-13550 BCE
Gādhi branch of Purus (Gādhipura)		
1.	Kuśa	13650-13600 BCE
2.	Kuśanābha	13600-13550 BCE
3.	Gādhi	13550-13500 BCE
4.	Viśvāmitra I	13500-13450 BCE
Atithigva branch of Purus		
1.	Atithigva	13450-13400 BCE
2.	Indrota	13400-13370 BCE
Rikśa branch of Purus		
1.	Rikśa	13450-13400 BCE
2.	Ārkśya	13400-13370 BCE

Āyogava Kings of the Manu Dynasty

Āyogavas were the sons of Śūdra men from Vaiśya women. Manu's sons,

Prişadhra and Nedişṭha, were the progenitors of Śūdras and Vaiśyas respectively. Saṁvarta Āṅgirasa, the brother of Brihaspati, anointed Marutta Āvīkśita, the descendant of Āyogava lineage of Nedişṭha. Viśvedevas (all descendants of thirty-three Devas) were in the court of King Marutta Āvīkśita. The Mahābhārata's Śāntiparva gives the following genealogy of Marutta Āvīkśita.

		In CE
1.	Manu Dandadhara	13850-13800 BCE
2.	Prajāti	13800-13770 BCE
3.	Kaśupa	13770-13730 BCE
4.	Ikśvāku	13730-13700 BCE
5.	Viṁśa	13700-13670 BCE
6.	Viviṁśa	13670-13630 BCE
7.	Khaninetra	13630-13600 BCE
8.	Suvarchasa	13600-13570 BCE
9.	Karandhama	13570-13550 BCE
10.	Avīkśita	13550-13530 BCE
11.	**Marutta Āvīkśita**	13530-13500 BCE

The Anu (Ānava) Dynasty

Anu I was probably a descendant of Puru I. Sabhānara, the eldest son of Anu, established his kingdom in Balia district of Uttar Pradesh, whereas his brothers, Pakśa and Parapakśa, founded their kingdoms in the north-western parts of India. King Bali, the descendant of Sabhānara, was a contemporary of Rishi Dīrghatamas Māmateya.

		In CE
	Puru I	13950-13925 BCE
	....	
1.	**Anu I**	**13850-13800 BCE**
2.	Sabhānara, Pakśa, Parapakśa	13800-13770 BCE
3.	Kālānala (Son of Sabhānara)	13770-13730 BCE
4.	Sriñjaya	13730-13700 BCE

5.	Purañjaya	13700-13670 BCE
6.	Janamejaya	13670-13630 BCE
7.	Mahāśāla	13630-13600 BCE
8.	Mahāmanāḥ	13600-13570 BCE
9.	**Titikśu** & Uśīnara I	13570-13550 BCE
10.	Uṣadratha (Son of Titikśu)	13550-13530 BCE
11.	Haima	13530-13500 BCE
12.	Bali	13500-13450 BCE
13.	Aṅga,Vaṅga,Kaliṅga,Punḍra, Suhma	13450-13400 BCE
14.	Anapāna (Son of Aṅga)	13400 BCE

King Uśīnara I and His Son Śivi I

Uśīnara I was the greatest king of the Anu dynasty. He had five wives: Nrigā, Krivi, Navā, Darvā and Driṣadvatī. Yaudheyas were the descendants of Nrigā. Kings of Navarāshtra descended from Navā. The clan of Krivis descended from Krivi. Śatapatha Brāhmaṇa mentions that Krivi was the older name of Pāñchāla.[17] It is evident that Krivis reigned in the Pāñchāla region before the birth of Pāñchāla dynasty. According to Rigveda, Krivis settled on Sindhu and Asiknī Rivers. Suvrata was the son of Darvā. Āṁbhaṣṭhas descended from Suvrata.[18]

Śivi I was the son of Driṣadvatī. Śivi had four sons: Vriṣadarbha, Suvīra, Kekaya and Madraka. Suvīra founded Sauvira janapada, Kekaya founded Kaikeya janapada and Madraka founded Madra janapada.

		In CE
1.	Uśīnara	13570-13550 BCE
2.	Śivi I or Śibi I	13550-13500 BCE
3.	Suvīra, Kekaya, Madra and Vriṣadarbha	13500-13450 BCE

The Druhyu, Turvaśa and Yadu Dynasties

Druhyu I, Turvaśa I and Yadu I were probably the brothers of Anu I and flourished around 13850 BCE. Purus, Anus, Druhyus, Yadus and Turvaśas emerged as the important royal lineages around 13850-13000 BCE.

The Yadu Dynasty

It is generally believed that Yadu, son of Yayāti, was the progenitor of Yādavas, but Yadus also existed before the beginning of Vaivasvata Manvantara. It appears that Puranic historians mixed up the genealogy of Śaśabindu's son Prithuyaśas or Prithuśravas and that of King Prithuśravas, son of Dūraśravas. Rigveda refers to King Prithuśravas Kānita.[19] Pañchviṁśa Brāhmaṇa mentions King Prithuśravas Dauraśravas, son of Dūraśravas. Evidently, there were at least two different kings named Prithuśravas.

Yadu I, a descendant of Puru I of Soma Vaṁśa, was the progenitor of the Yadu dynasty and lived around 13000 BCE. Kroṣṭu I was the son of Yadu I. Purāṇas (Kūrma Purāṇa, Harivaṁśa and more) give the following genealogy of the Yadus.

		In CE
	Soma I and his son Puru I	14000-13900 BCE
	…………	
	Yadu I	13850 BCE
	…………	
	Yadu II	13000 BCE
1.	Kroṣṭu I	13000-12970 BCE
2.	Vrijinīvān	12970-12930 BCE
3.	Svāhi	12930-12900 BCE
4.	Ruṣadgu	12900-12870 BCE
5.	Chitraratha I	12870-12830 BCE
6.	Śaśabindu I	12830-12800 BCE
7.	Prithuyaśas	12800-12770 BCE
8.	Prithukarmā	12770-12730 BCE
9.	Prithujaya	12730-12700 BCE
10.	Prithukīrti	12700-12670 BCE
11.	Prithudāna	12670-12630 BCE
12.	Prithuśravas I	12630-12600 BCE
13.	Antara or Dharmaottara	12600-12570 BCE
14.	Suyajña or Prithusattama	12570-12530 BCE

15.	Uśana or Uśata	12530-12500 BCE
16.	Śiteyu or Titikśu	12500-12470 BCE
17.	Marut or Matsya	12470-12430 BCE
18.	Kambala Barhiṣa	12430-12400 BCE
19.	Rukma Kavacha	12400-12370 BCE
20.	Parāvrita or Parājit or Haviṣmān	12370-12330 BCE
21.	Jyāmagha, Rukmeśu, Prithurukma, Pālita and Hari	12330-12300 BCE
22.	**Vidarbha (Son of Jyāmagha)**	**12300-12250 BCE**

Jyāmagha conquered Rikśavant Parvata and built his capital on the banks of Śuktimatī River. His wife was Chitrā. Vidarbha was the son of Jyāmagha, who founded the kingdom of Vidarbha. King Vidarbha had three sons: Kratha or Bhima, Kaiśika and Lomapāda.

23.	Kratha or Bhima (Son of Vidarbha)	12250-12230 BCE
24.	Kunti	12230-12200 BCE
25.	Dhriṣṭha	12200-12170 BCE
26.	Nirvriti or Ananta	12170-12130 BCE
27.	Daśārha	12130-12100 BCE
28.	Vyoma	12100-12070 BCE
29.	Jīmūta	12070-12030 BCE
30.	Vikriti	12030-12000 BCE
31.	Bhīmaratha	12000-11970 BCE
32.	Navaratha	11970-11930 BCE
33.	Daśaratha	11930-11900 BCE
34.	Śakuni	11900-11870 BCE
35.	Karambha	11870-11830 BCE
36.	Devarāta	11830-11800 BCE
37.	Devakśatra or Devadatta	11800-11770 BCE
38.	**Madhu I**	11770-11710 BCE
39.	Purutvān or Kuru	11710-11670 BCE
40.	Madhu II or Anu	11670-11630 BCE

41.	Yadu III or Purukutsa	11630-11600 BCE
42.	**Mādhava or Aṅśu**	11600-11550 BCE
43.	**Sātvata**	11550-11500 BCE

The Descendants of Lomapāda

		In CE
1.	Lomapāda (Son of Vidarbha)	12250-12220 BCE
2.	Babhru	12220-12190 BCE
3.	Dhriti	12190-12150 BCE
4.	Śveta	12150-12120 BCE
5.	Viśvasaha	12120-12090 BCE
6.	**Kaiśika**	12090-12050 BCE
7.	Sumantu and Chedi	12050-12000 BCE
8.	Anala	12000-11970 BCE

Kaiśika, the 5th descendant of Lomapāda, had a son named Chedi who was the founder of the Chedi dynasty.

6.	**Kaiśika**	12090-12050 BCE
7.	Chedi (Son of Kaiśika)	12050-12000 BCE
8.	Dyutimān	12000-11970 BCE
9.	Vapuṣmān	11970-11930 BCE
10.	Śrideva	11930-11900 BCE
11.	Vītaratha	11900-11870 BCE

Sātvata (11550-11500 BCE) had many sons, like Bhajin, Bhajamāna, Divya, Devavridha, Mahābhoja, Andhaka and Vriṣṇi. They came to be known as Sātvatas. Andhaka and Vriṣṇi were the progenitors of Andhaka and Vriṣṇi lineages of the Yadu dynasty.

The Geography of Sapta-Sindhu Region

Sapta-Sindhu region was the heartland of the Rigvedic era. Nadī Sūkta of Rigveda gives the names and geographical map of seven rivers of the early Vedic period.[20] This region of Sapta-Sindhu was the origin of ancient

Indian civilization. Rigveda gives the names of the seven rivers as Ganga, Yamuna, Sarasvati, Śutudrī, Marudvridhā, Ārjikīyā and Sindhu. Rigveda also tells us that Paruṣṇī was a tributary of Śutudrī (Satlej), Asiknī was a tributary of Marudvridhā, and Vitastā and Suṣomā were tributaries of Ārjikīyā. Kubhā (Kabul River), Triṣṭāma, Gomatī, Krumu (Kurram River) and Mehatnu were the tributaries of Sindhu River.

इमं मे गङ्गे यमुने सरस्वति शुतुद्रि सतेमं सचता परुष्ण्या।
असिक्न्या मरुद्वृधे वितस्तयार्जीकीये शर्णुह्यासुषोमया॥
तर्ष्टामया परथमं यातवे सजूः ससर्त्वा रसयाश्वेत्या तया।
तवं सिन्धो कुभया गोमतीं करुमुम्मेहत्न्वा सरथं याभिरीयसे ॥

Historians mistakenly identified Asiknī as Chandrabhāgā. If Asiknī was Chandrabhāgā (Chinab), how was it a tributary of Marudvridhā (not yet identified)? How was Vitastā a tributary of Ārjikīyā? Evidently, the course of the rivers of Vedic era had changed after the Rigvedic era. Some of the rivers, like Marudvridhā, Asiknī, Ārjikīyā, and Paruṣṇī, gradually became extinct after the great flood around 11200 BCE. Probably, the glacial lake of Kashmir Valley was the origin of Asiknī, Marudvridhā and Ārjikīyā rivers. The entire Vedic literature clearly indicates that Vedic culture originally evolved in this Sapta-Sindhu region. Seemingly, the people of Sapta-Sindhu region had periodically migrated in all directions, starting from 14000 BCE to the post-Rāmāyaṇa era (5577-3177 BCE). Therefore, Sapta-Sindhu region was the true cradle of human civilization.

Mount Sumeru (K2 mountain of Gilgit Baltistan)

Sumeru was considered as the northern border of India since the Rigvedic period. Later Indian astronomers, starting from Āryabhaṭa, mention that Ujjain and Sumeru are located on the prime meridian. Vateśvara, Śripati and more, give the names of places starting from Kanyakumari to Sumeru. Lanka (a longitudinal line that intersects on equator at 76.30 E), Kumārī (Kanyakumari), Kānchi (though the city of Kānchi is located at 79.5 E, Koṅgudeśa was part of Kānchi Kingdom for a long time. Most probably, Coimbatore of Koṅgudeśa was referred to as Kānchi), Pannāṭa (Between Mysore and Coorg in Karnataka), Sitādri (the hills close to Vijayanagara), Sadasya (probably Osmanabad or Dhārāśiva city), Vatsagulma (Washim

district of Maharashtra), Māhiṣmatī (Modern city of Maheshwar in MP), Ujjain or Avanti, Gargarata (Garoth? Kota? In Rajasthan), Mālavanagara (close to Sawai Madhopur and Jaipur city), Rohītaka (Rohtak in Haryana), Sthāṇvīśvara (Thanesar in Haryana), Sitagiri (probably close to Kargil or Nanga Parvat in Gilgit Baltistan) and Sumeru (K2 Mountain of Gilgit Baltistan) are located on the meridian of Ujjain. Thus, K2 mountain of Gilgit Baltistan was undoubtedly the Sumeru of Rigvedic geography. There were many mountains having the name of Meru but Sumeru was the only one.

The Origin of Ancient Vedic Kingdoms Before Vaivasvata Manu

No.	Kingdom	Description
1.	**Brahmāvarta**	Brahma and his son Svāyambhuva Manu were the founders of Brahmāvarta Kingdom on the banks of Sarasvati and Driṣadvatī Rivers around 14500 BCE.
2.	**Ayodhyā**	Manu and his descendants founded a kingdom in Ayodhyā around 14000 BCE. Triśaṅku was the earliest famous king of Ayodhyā.
3.	**Aṅga**	Aṅga, Vaṅga, Kaliṅga, Pundra and Suhma were the sons of Ānava King Bali. They established these kingdoms in North Bihar (Aṅga), Avadh, UP (Kaliṅga) North Bengal (Punḍra), South Bengal (Vaṅga) and East Bengal (Suhma) around 13400 BCE. The city of Kaliṅganagara was situated on the banks of Gomatī River before Ayodhyā during the Rāmāyaṇa era. The region of Avadh and Varanasi was also called "Trikaliṅga" during the time of Chedi king Karṇa.
4.	**Vaṅga**	
5.	**Kaliṅga**	
6.	**Punḍra**	
7.	**Suhma**	
8.	**Mahodayapurī Gādhipura or Kānyakubja**	Kuśanābha, son of Kuśa, founded Mahodayapurī around 13550 BCE. The same city came to be known as Gādhipura and Kānyakubja after 13500 BCE.
9.	**Kauśāmbī**	Kuśāmba, son of Kuśa, founded the city of Kauśāmbī around 13550 BCE.

10.	**Girivraja**	Vasu, son of Kuśa, founded Girivraja (later, known as Rājagriha or Rajgir) around 13550 BCE. There were two cities named Girivraja. The Rāmāyaṇa indicates that another city named Girivraja existed in Kekaya Kingdom.
11.	**Dharmāraṇya**	Asūrtarajasa or Amūratarāyasa, son of Kuśa, founded Dharmāraṇya (close to Gayā) around 13550 BCE.
12.	**Gayā**	Gaya, son of Amūrtarāyasa, founded the city of Gayā around 13500 BCE.
14.	**Kāmpilya**	Brahmadatta was the first known king of Kāmpilya and he reigned around 13550 BCE.
15.	**Saurashtra**	Tāpasa Manu, son of Surāshtra, or his descendants founded the kingdom of Saurashtra around 13200 BCE.
16.	**Matsya**	Matsya, a descendant of Haihayas or Chedis, was the founder of Matsya Kingdom. Later, Matsya word became synonymous to fish in Sanskrit.

Rigvedic Kśatriyas and Warrior Tribes Before Vaivasvata Manu

1.	**Mānavas and Aiḍas**	The progeny of King Manu and mother Iḍā were known as Mānavas and Aiḍas.
2.	**Rudras and Śivas**	The descendants of Rudra came to be known as Śivas by the end of Chākśuṣa Manu, around 11250 BCE. Śivas participated in the Dāśarājña War.
3.	**Purus**	Puru I (13950 BCE) was the progenitor of Purus or Pauravas. Sanskrit word Puruṣa is derived from Puru.
4.	**Bharatas**	Bharata (13450 BCE) was the progenitor of the Bharata branch of Purus.
5.	**Anus**	Anu I (13850 BCE) was the progenitor of Anus.

6.	**Druhyus**	Druhyu I (13850 BCE) was the progenitor of Druhyus.
7.	**Turvaśas**	King Turvaśa I (13850 BCE) was the progenitor of Turvaśas. Sāyaṇa mentions that Turvaśas fought with Matsya Janapada.[21]
8.	**Yadus**	Yadu I (13850 BCE) was the progenitor of Yadus.
9.	**Tritsus**	Tritsu was a branch of Bharatas.
10.	**Bhrigus**	The Kśatriya descendants of Rishi Bhrigu were known as Bhrigus.
11.	**Viṣāṇins**	These were the earliest Yaudheya (warrior) tribes of western and north-western India. Yaudheyas descended from the son of King Uśīnara and his wife Nrigā.
12.	**Bhalanas**	
13.	**Alinas**	
14.	**Pakthas**	
15.	**Parśus**	
16.	**Yakśus**	Yakśus and Paṇis were the Asura businessmen and also warriors.
17.	**Paṇis**	
18.	**Kīkatas**	Kīkatas were the original inhabitants of Magadha Kingdom. Later, Kīkatas came to be known as Magadhas because they settled on the banks of Māgadhi River of Gayā region.
19.	**Krivis**	Krivis settled on the banks of Indus and Asiknī Rivers. They were the earliest inhabitants of Pāñchāla janapada.

Political Situation Before Vaivasvata Manu

Devas and Asuras were in a major conflict during the period 11500-11200 BCE. Indra III (11325 BCE) was the king of Devas. He married Śachī, daughter of Asura King Pulomā. His capital Amarāvatī was located in Central India. Śaṁbara, the son of Kulītara, was the powerful king of Asuras. Śaṁbara had captured 100 forts or cities. Tritsu Bharata King Divodāsa Atithigva was reigning in Pāñchāla or Kurukshetra region. Finally, Indra defeated and killed Śaṁbara with the support of Divodāsa Atithigva. Kāshi kings and Haihaya kings were also in a conflict during the period 11400-11300 BCE. Divodāsa and his son Pratardana were

the early kings of Kāshi around 11350-11300 BCE. Most probably, they belonged to a branch of the Bharata Dynasty. Dāśarājña War took place around 11250 BCE, during the reign of King Sudāsa Paijavana.

Tritsu Bharata Kings of Kurukshetra

	Tritsu Bharatas	In CE
1.	Devavāta	11400-11350 BCE
2.	Sriñjaya Daivavāta	11350-11325 BCE
3.	Divodāsa Atithigva	11325-11300 BCE
4.	Pijavana	11300-11275 BCE
5.	Sudāsa Paijavana	11275-11230 BCE

Early Kāshi Kings

	Kāshi Kings	In CE
1.	Haryāśva	11400-11350 BCE
2.	Sudeva	11350-113250 BCE
3.	Divodāsa	11325-11300 BCE
4.	Pratardana	11300-11275 BCE
5.	Vatsa or Ritadhvaja	11275- 11250 BCE
6.	Alarka (Subāhu was his brother)	11250-11200 BCE
7.	Sannati (Son of Alarka)	11200-11175 BCE

Seemingly, the descendants of Haryāśva lost the kingdom of Kāshi after the reign of Alarka or his son Sannati. Some legends of Vāyu, Brahma, Harivaṁśa Purāṇas and Kāshi Khanda of Skanda Purāṇa indicate that they had founded another city on the banks of Gomatī River. Their new kingdom came to be known as Vatsa in memory of King Vatsabhumi or Vatsa. Thus, Vatsa janapada came into existence.

The Kings of Vatsa Kingdom (11175-10800 BCE)

Brahma, Bhāgavata, Vāyu and Agni Purāṇas give the following genealogy of the descendants of Alarka.[22]

	Brahma Purāṇa	**Bhagavata Purāṇa**	**Vayu Purāṇa**	**Agni Purāṇa**
1.	Alarka	Alarka	Alarka	Alarka
2.	Sannati	Sannati	Sannati	Dharmaketu
3.	Sunītha	Sunītha	Sunītha	Vibhu
4.	Kśema	Suketana	Suketu	Sukumāra
5.	Ketumat	Dharmaketu	Dhriṣṭaketu	Satyaketu
6.	Suketu	Satyaketu	Veṇuhotra	
7.	Dharmaketu	Dhriṣṭaketu	Gārgya	
8.	Satyaketu	Sukumāra	Gārgyabhūmi	
9.	Vibhu	Vītihotra	Vatsabhūmi	
10.	Suvibhu	Bharga		
11.	Sukumāra	Bhargabhūmi		
12.	Dhriṣṭaketu			
13.	Veṇuhotri			
14.	Bharga			
15.	Vatsabhūmi			

Early Ayodhyā Kings

Manu and his descendants were the founders of Ayodhyā Kingdom around 14000 BCE. Hariśchandra I, the son of Triśaṅku, reigned around 13450-13400 BCE. Thereafter, we have no information of Ayodhyā kings. Rohidāśva, probably a descendant of Triśaṅku, was the king of Ayodhyā around 11325 BCE. The legend of Gālava is related to Rohidāśva and the legend of Śunaḥśepa is related to Hariśchandra II.

	Early Ayodhyā Kings	**In CE**
1.	Rohidāśva	11325-11300 BCE
2.	Vasumanas	11300-11270 BCE
3.	Vedhas	11270-11250 BCE
4.	Hariśchandra II	11250-11200 BCE
5.	Rohita	11200-11180 BCE

The Bharata Kings of Bhojanagara

The descendants of Bharata dynasty were the kings of Bhojanagara. King Uśīnara reigned around 11325-11300 BCE. He was the progenitor of the Uśīnaras of Madhyadeśa. Aitareya Brāhmaṇa, Kauṣītakī Upaniṣad and Gopatha Brāhmaṇa collocate Uśīnaras in Madhyadeśa, along with Savaśas, Kuru-Pāñchālas and Sātvat-Matsyas.[23] Gopatha Brāhmaṇa mentions Uśīnaras along with Audīchyas (northerners). There is a village named Bhojanagar in Jodhpur district of Rajasthan. Most probably, Vedic King Uśīnara's capital Bhojanagara was located in Jodhpur on the banks of Sarasvati River. Uśīnara had a son named Śivi from Mādhavī, daughter of Yayāti of the Manu dynasty.

		In CE
1.	Uśīnara II	11325-11300 BCE
2.	Śivi II	11300-11270 BCE

There were many Śivis. Somavaṁśī King Śivi I was the son of Uśīnara I and Driṣdvatī, a descendant of Anu I. Śivi II was the son of Uśīnara II and a descendant of the Manu dynasty. Dānava King Hiraṇyakaśipu also had a son named Śivi III. There was another Śivi IV of the Chandra dynasty who was a contemporary of Ikśvāku King Anaraṇya.

King Abhyāvartin Chāyamāna (11325-11300)

King Chāyamāna was probably a descendant of the Puru dynasty. His son Abhyāvartin Chāyamāna was a contemporary of Indra and Sriñjaya Devavāta's son Divodāsa. Pāyu Bhāradvāja, author of Rigvedic hymns, flourished during the reign of Abhyāvartin Chāyamāna.[24] Bhāradwāja Bārhaspatya indicates that Indra killed Asura King Varaśikha and his 130 sons.[25] Varaśikha was the son of Vrichīvat and his capital city of Hariyūpīya. Rigveda also mentions Yāvyavatī related to Hariyūpīya. According to Sāyaṇa, Hariyūpīya was a city or a river. Most probably, Hariyūpīya city of Asura kings was the archaeological site of Harappa and Ravi River was known as Yāvyavatī during the Rigvedic period. According to Pañchaviṁśa Brāhmaṇa, Yāvyavatī River was associated with the Kuru-Pāñchāla region.

		In CE
1.	Chayamāna	11350-11325 BCE
2.	Abhāvartin Chāyamāna	11325-11300 BCE

King Vriṣagira and His Five Sons (around 11300-11200 BCE)

King Vriṣagira had five sons, namely, Rijrāśva, Ambarīṣa, Sahadeva, Bhayamāna and Surādhas. Most probably, these kings flourished around 11300-11200 BCE. There were two more Ambarīṣas in the Ikśvāku dynasty. One Ambarīṣa was the son of Nābhāga and another was the son of King Māndhātā.

King Triṇabindu (11300 BCE) and Rishi Pulastya (11275 BCE)

Rishi Pulastya married Ilavilā, daughter of King Triṇabindu. He had a son, Viśravas. Viśravas had four wives: Devavarṇini, Kaikasi, Puṣpotkatā and Vākā. Kubera was the son of Devavarṇini, and Rāvaṇa I was the son of Kaikasi. Rāvaṇa I was a junior contemporary of Arjuna Kārtavīrya (11200 BCE).

Rishi Kaśyapa II and His Progeny (11300 BCE)

Kaśyapa married thirteen daughters of Dakśa Prajāpati. There were at least two famous Kaśyapas. Kaśyapa I (14050 BCE) was the father of Ādityas, whereas Kaśyapa II flourished at the end of Chākśuṣa Manvantara. There is also a divergence of opinion about the names of thirteen wives of Kaśyapa. Seemingly, Purāṇas mixed up the historical account of the two Kaśyapas.

	Kaśyapa's wives	Sons
1.	Aditi II	Vivasvān
2.	Diti	Hiranyakaśipu and Hiranyākśa
3.	Danu	Mother of Dānavas
4.	Ariṣṭā	Mother of Gāndharvas
5 & 6.	Kadru and Surasā	Mothers of Nāgas, Uragas and Pannagas like Vāsuki, Śeṣa, Nila and (Takśaka?)
7.	Vinatā	Mother of Garuda and Aruna
8.	Krodhavaśā	Mother of Rākśasas
9.	Irā	Mother of Airas.

10. Muni
11. Viśvā
12. Tāmrā
13. Surabhi

The Chronology of Sūrya Vaṁśa

The Rigvedic Kings of Sūrya Vaṁśa (11300-10000 BCE)
Vivasvān, the grandfather of Ikśvāku, was the progenitor of Sūrya Vaṁśa. His son was Vaivasvata Manu. It is generally assumed that Śraddhadeva, Vaivasvata and Satyavrata Manus were the same person. Śraddhadeva was the son of Sūrya and Saṁjñā. Saṁjñā was a daughter of Viśvakarmā I. Puranic authors mistakenly assumed Sūrya and Vivasvān as identical. Sūrya was a Devatā of some Rigvedic Sūktas whereas Vivasvān was the rishi of a Sūkta.[27] Therefore Sūrya I, father of Aśvinī Kumāras (13650-13600 BCE), was probably the father of Śraddhadeva. Purāṇas also indicate Vaivasvata Manu and Satyavrata to be the same person. Probably, Satyavrata was the original name of Vaivasvata Manu. Interestingly, Satyavrata was referred to as Draviḍeśvara, i.e., King of Draviḍas. Many scholars speculated him to be the King of South India. Draviḍa was never a geographical term in Sanskrit. Manusmriti states that Draviḍas were the Vrātya Kśatriyas. The Mahābhārata refers to Draviḍa kings (Velirs?) along with the Pāṇḍyas, Cholas and Keralas. Evidently, Draviḍas were a community of Kśatriyas. Tamil sources mention that Yaduvaṁśi kings (Velirs) migrated to Tamil Nadu from the city of Dvāravatī. The word "Tamil" is probably derived from Draviḍa (Damila = Tamil). In fact, Draviḍa, the son of Sri Krishna and Jāmbavatī, was the progenitor of Draviḍas. Saurashtra region and Dvāravatī was ruled by Draviḍas after Sri Krishna. Since Satyavrata, or Vaivasvata, reigned over Saurashtra region, he was referred to as Draviḍeśvara.

According to Saura Purāṇa, Vaivasvata Manu had nine sons – Ikśvāku, Nabhāga, Śaryāti II, Ariṣṭa, Nāriṣyanta, Nābhāga II, Dhriṣṭa, Karūṣa and Vriṣadhvaja – and a daughter named Ilā.[28] Ikśvāku was the founder of Ikśvāku dynasty in Madhyadeśa. According to Purāṇas, Ikśvāku's son

was Vikukśi but the Rāmāyaṇa tells us that Ikśvāku's son was Kukśi and Vikukśi was the son of Kukśi. The legend of Danḍa and Śukrāchārya given in Uttarakānda indicates that Danḍa, or Danḍaka, was the youngest son of Ikśvāku. The genealogy of the early descendants given in the inscriptions of Cholas is different from the genealogy given in Purāṇas. Seemingly, there were some gaps in the genealogical and chronological account of the kings of Ikśvāku dynasty. Later updaters of Purāṇas, who were ignorant of the true chronology, had created a continuous list of the kings of Ikśvāku dynasty. Therefore, it may be chronologically incorrect to follow the genealogical lists as given in the Rāmāyaṇa, Mahābhārata, Purāṇas and Chola inscriptions. We have to critically examine these genealogical lists with reference to various legends in which other contemporary kings have been mentioned.

According to historical legends, Māndhātā, son of Yuvanāśva married the daughter of Chandravaṁśi King Śaśabindu. Kuvalayāśva, father of Yuvanāśva, was a contemporary of Rishi Uttaṅka. Saubhari refers to Trasadasyu, son of Purukutsa and grandson of Māndhātā in his hymn of Rigveda. He married fifty daughters of Māndhātā. Rishi Aṣṭāvakra was a contemporary of King Janaka and Bhagīratha. We can reconstruct the following chronological list of early Ikśvāku kings.

	Ikśvāku Kings of Madhyadeśa	**In CE**
	Kaśyapa	11310 BCE
1.	Vivasvān	11290 BCE
2.	Vaivasvata Manu	11270 BCE
3.	Ikśvāku	11250 BCE
4.	ViKukśi	11230 BCE
5.	Kakustha or Purañjaya	11210 BCE
6.	Kuvalayāśva I	11190 BCE
7.	Yuvanaśva I	11170 BCE
8.	Māndhātā I	11150 BCE
9.	Susandhi, Ambarīṣa, Purukutsa and Muchukunda	11120 BCE

10.	Dhruvasandhi I (Son of Susandhi) & Trasadasyu (Son of Purukutsa)	11100 BCE
11.	Bharata (Son of Dhruvasandhi)	11050 BCE
12.	Asita	11030 BCE

The Date of Rishi Uttaṅka (11170-11070 BCE)

Western Indologists ridiculed the legend of Rishi Uttaṅka given in the Mahābhārata and declared that the story of Uttaṅka is a farrago of absurdities and chronological errors. In fact, the ignorance of true chronology of Rigvedic period led to this assumption. Rishi Uttaṅka was the disciple of Rishi Veda. Rishi Dhaumya, the younger brother of Rishi Devala (11150 BCE), was the guru of Rishi Veda. Rishi Devala was the pupil of Veda Vyāsa I (11180-11050 BCE), the son of Parāśara. Rishi Uttaṅka was a contemporary of King Pauṣya, Nāga King Takśaka II and King Janamejaya, son of Parīkśit. Ikśvāku King Kuvalayāśva was a junior contemporary of Rishi Uttaṅka. Kuvalayāśva killed Asura King Dhundhu, son of Madhu and Kaiṭabha, and came to be known as Dhundhumāra. Vishnu killed Madhu and Kaiṭabha. Maitrāyaṇī Upaniṣad mentions the names of great kings like Marutta, Bharata, Sudyumna, Bhūridyumna, Indradyumna, Kuvalayāśva, Yauvanāśva, Vadhyāśva, Aśvapati, Śaśabindu, Hariśchandra, Ambarīṣa, Nanaktu, Śaryāti, Yayāti, Anaraṇya and Ukśasena. Evidently, Kuvalayāśva flourished before Yauvanāśva or Yuvanāśva. Seemingly, Devakīputra Krishna was also a junior contemporary of Rishi Uttaṅka. Thus, we can fix the lifetime of Uttaṅka around 11170-11070 BCE.

Another version of the legend of Uttaṅka mentions Rishi Veda and King Pauṣya as Rishi Gautama and King Mitrasaha Saudāsa (Kalmāṣapāda) respectively. King Kalmāṣapāda also flourished around 11200-11150 BCE. Therefore, there is no chronological inconsistency in the legend of Uttaṅka and Kuvalayāśva.

Early Ikśvāku Kings of Ayodhyā

The early kings of Ikśvāku dynasty reigned in Madhyadeśa. Māndhātā was the greatest King of Madhyadeśa. Māndhātā also had a son named Ambarīṣa. Hārīta, the grandson of Ambarīṣa, became a rishi. King Bharata

also became a rishi. His son Asita lost his ancestral kingdom. Haihayas, Talajaṅghas and Śaśabindus became enemies of King Asita and they drove him away from Madhyadesha. Probably, King Bāhu, or Bāhuka, was the son of Asita. King Bāhu's son Sagara established his kingdom in Ayodhyā or Kosala. Thus, the history of Ikśvāku kings of Ayodhyā probably begins from King Sagara. Seemingly, King Sagara had many sons who killed Rishi Kapila. Kapila II, son of Rishi Kapila, killed all sons of Sagara except Barhiketu, Suketu, Dharmaratha and Pañchajana or Pañchananda. Śiva Purāṇa and Harivaṁśa refer to Pañchajana as the son of Sagara.

	Ikśvāku kings of Ayodhyā	**In CE**
	Bāhu or Bāhuka	
1.	Sagara I	11000-10950 BCE
2.	Barhiketu, Suketu, Dharmaratha and Pañchajana or Pañchananda	10950-10900 BCE
3.	Bhajeratha or Bhagīratha I	10900-10850 BCE

Rigveda mentions the names of Sūrya Vaṁśi kings Ikśvāku, Yuvanāśva, Māndhātā, Purukutsa, Trasadasyu and Bhajeratha. Seemingly, "Bhajeratha" had been transformed into "Bhagīratha" in Laukika Sanskrit. Probably, Bhagīratha I had no sons. The Rigvedic era ends with the disappearance of Vedic Sarasvati River in Thar Desert around 10950 BCE. Therefore, we have no information of Vedic Ikśvāku kings who reigned after Bhajeratha or Bhagīratha I.

King Sudyumna (12000 BCE) and Ilā (11250 BCE)

Sudyumna was the son of Chākśuṣa Manu and Ilā was the daughter of Vaivasvata Manu. Puranic historians mistakenly assumed them to be contemporaries and concocted a story that Ilā, daughter of Vaivasvata Manu, transformed into a man and came to be known as Sudyumna. In reality, Sudyumna, son of Chākśuṣa Manu, lived before Vaivasvata Manu. He had three sons: Utkala, Gaya II and Vimala. Utkala established his kingdom in Orissa and Gaya reigned on the banks of Payoṣṇī (Tapatī River). There were two kings named Gaya. Gaya I was the son of Amūrtarāyasa and lived around 13500 BCE.

Rajarshi Sindhudvīpa (11200 BCE)
Nābhāga, the son of Vaivasvata Manu, was the father of King Ambarīṣa. King Sindhudvīpa, son of Ambarīṣa, became a rishi and wrote hymns of Rigveda. Rishi Rathītara (Āṅgiras) was a Kśatriya but became Brāhmaṇa and the descendant of the lineage of Nābhāga.

King Śaryāti II (11240 BCE)
King Śaryāti was also a son of Vaivasvata Manu. His son Ānarta founded the kingdom of Ānarta in the north of Saurashtra. King Ānarta's son was Revata. Revata's son was Kakuda or Kakudmin. The Rākśasas occupied Ānarta Kingdom after Kakuda. Later, the Yādavas migrated to Ānarta Kingdom and Devakīputra Krishna founded the city of Dvāravatī, or Dwārakā. Viśvakarmā was the architect of Dvāravatī.

Ikśvāku King Brihadratha (10850 BCE)
Maitrāyaṇī Upaniṣad (8600 BCE) relates the story of Ikśvāku King Brihadratha and Rishi Śākāyana. Kāthaka Saṁhitā refers to Rishi Jāta Śākāyana.[29] Seemingly, Brihadratha was a son or a grandson of Bhagīratha I.

King Hiraṇyanābha Kauśalya and His Son Para Atnāra (10900 BCE)
Praśnopaniṣad refers to a prince named Hiraṇyanābha of Kosala janapada, a contemporary of Rishi Pippalāda (10900 BCE). Most probably, Hiraṇyanābha belonged to the Ikśvāku dynasty. He was the guru of Krita who had introduced twenty-four new branches of Sāmaveda. Śatapatha Brāhmaṇa mentions that Para Atnāra (10850 BCE) was the son of Hiraṇyanābha.

King Parīkśit of Ikśvāku Dynasty
The Mahābhārata refers to King Parīkśit of Ikśvāku dynasty.[30] The name of Parīkśit is missing from the genealogical lists of Ikśvāku dynasty given in the Purāṇas. Unfortunately, the continuous genealogical history of the Ikśvāku dynasty of the period 10850-7600 BCE is now irretrievably lost.

Ikśvāku Kings of Kosala or Ayodhyā (7600-4750 BCE)
It is generally assumed that Śaśāda and Vikukśi were the same person, but it may not be true. Most probably, Śaśāda was a later descendant of

the Ikśvāku dynasty and the father of Kakustha I. Seemingly, Kakustha I had re-established the powerful kingdom of Ikśvākus around 7600 BCE. Puranic historians erroneously mixed up the list of descendants of Śaśāda and Vikukśi. We have roughly a genealogical list of sixty-one Ikśvāku kings up to Sri Rāma as given in various Purāṇas. Kālidāsa's Raghu Vaṁśa gives the genealogy of Ikśvāku kings starting from King Dilīpa. I have followed the Puranic genealogy up to the fifty-sixth king, Viśvasaha, with minor correction in the names of the descendants of Rituparṇa. Thereafter, I have followed Kālidāsa's Raghu Vaṁśa.

	Ikśvāku kings of Ayodhyā	**In CE**
1.	Śaśāda	7600-7570 BCE
2.	Kakustha I	7570-7530 BCE
3.	Anenāḥ or Suyodhana	7530-7500 BCE
4.	Prithu	7500-7470 BCE
5.	Viśvagaśva	7470-7430 BCE
6.	Ardra or Damaka or Indu	7430-7400 BCE
7.	Yuvanāśva II	7400-7460 BCE
8.	Śrāvasta (the founder of the city of Śrāvastī)	7460-7430 BCE
9.	Brihadaśva	7430-7400 BCE
10.	Kuvalāśva II	7400-7360 BCE
11.	Driḍhāśva	7360-7330 BCE
12.	Pramoda	7330-7300 BCE
13.	Haryāśva I	7300-7260 BCE
14.	Nikumbha	7260-7230 BCE
15.	Saṁhatāśva	7230-7200 BCE
16.	Kriṣāśva and Akritāśva	7200-7160 BCE
17.	Prasenajit (Son of Kriṣāśva)	7160-7130 BCE
18.	Yuvanāśva II and Māndhātā II (Sons of Prasenajit)	7130-7100 BCE
19.	Māndhātā II	7100-7070 BCE
20.	Purukutsa (Son of Māndhātā II)	7070-7040 BCE
21.	Vasuda (Son of Purukutsa)	7040-7000 BCE

22.	Saṁbhūta	7000-6960 BCE
23.	Anaraṇya I	6960-6730 BCE
24.	Trisadaśva	6930-6900 BCE
25.	Haryāśva II	6900-6860 BCE
26.	Vasumata	6860-6830 BCE
27.	Tridhanvā	6830-6800 BCE
28.	Tryāruṇa	6800-6770 BCE
29.	Satyavrata	6770-6730 BCE
30.	Satyaratha	6730-6700 BCE
31.	Hariśchandra	6700-6670 BCE
32.	Rohitāśva	6670-6630 BCE
33.	Hārīta, Chanchu	6630-6600 BCE
34.	Vijaya	6600-6560 BCE
35.	Ruruka	6560-6530 BCE
36.	Vrika	6530-6500 BCE
37.	Bāhu	6500-6460 BCE
38.	Sagara II	6460-6430 BCE
39.	Asamañjasa	6430-6400 BCE
40.	Aṅśumān	6400-6360 BCE
41.	Dilīpa I Khaṭvāṅga	6360-6330 BCE
42.	Bhāgīratha II	6330-6300 BCE
43.	Śruta or Śrutasena	6300-6270 BCE
44.	Nābhāga	6270-6230 BCE
45.	Ambarīṣa	6230-6200 BCE
46.	Sindhudvīpa	6200-6160 BCE
47.	Ayutāyu or Ayutajit	6160-6120 BCE
49.	Rituparṇa	6120-6080 BCE
50.	Ārtaparṇi or Kalmāṣapāda II or Mitrasaha	6080-6040 BCE
51.	Sarvakarma	6040-6000 BCE
52.	Anaraṇya II	6000-5960 BCE
53.	Mūlaka	5960-5920 BCE

54.	Śataratha	5920-5880 BCE
55.	Ilavilā or Ailavila	5880-5840 BCE
56.	Viśvasaha	5840-5800 BCE

The Genealogy of Ikśvāku Kings (Kālidāsa's Raghu Vaṁśa)

57.	Dilīpa II Ailavila (Son of Ilavila)	5800-5770 BCE
58.	Raghu II or Dīrghabāhu	5770-5740 BCE
59.	Aja	5740-5700 BCE
60.	Daśaratha	5700-5649 BCE
61.	Rāma	5635-5590 BCE
62.	Kuśa	5590-5530 BCE
63.	Atithi (killed in a war with Asura Durjaya.)	5530-5500 BCE
64.	Niṣāda	5500-5470 BCE
65.	Nala	5470-5440 BCE
66.	Nabhas	5440-5400 BCE
67.	Punḍarīka	5400-5370 BCE
68.	Kśemadhanvā	5370-5330 BCE
70.	Devānīka	5330-5300 BCE
71.	Ahināgu	5300-5260 BCE
72.	Paripātra	5260-5230 BCE
73.	Śīla	5230-5200 BCE
74.	Unnābha	5200-5170 BCE
75.	Vajranābha	5170-5140 BCE
76.	Śaṅkhana	5140-5100 BCE
77.	Vyuṣitāśva	5100-5070 BCE
78.	Viśvasaha	5070-5040 BCE
79.	Hiraṇyanābha	5040-5000 BCE
80.	Kauśalya	5000-4970 BCE
81.	Brahmiṣṭha	4970-4930 BCE
82.	Putra	4930-4900 BCE
83.	Puṣya	4900-4870 BCE

84.	Dhruvasandhi (killed by a lion when his son Sudarśana was six years old)	4870-4850 BCE
85.	Sudarśana	4850-4800 BCE
86.	Agnivarṇa	4800-4780 BCE
87.	Wife of Agnivarṇa	4780-4750 BCE

Kālidāsa ends his historical narrative of Raghu Vaṁśa after the death of Agnivarṇa. Seemingly, the kingdom of Ikśvākus had been gradually split into many branches after the reign of Agnivarṇa's wife and also lost its political dominance in north India. The Rāmāyaṇa gives the following names of Ikśvāku kings before Aja and Daśaratha but Puranic historians ignored them for unknown reasons. Garuḍa Purāṇa indicates that the Videha King Udāvasu was the son of Ayodhyā King Prasuśruta and the grandson of King Maru.[31]

		In CE
1.	Raghu	6600-6400 BCE (nos. 1–7)
2.	Pravriddha	
3.	Śaṅkhana	
4.	Agnivarṇa	
5.	Padmavarṇa	
6.	Śīghra	
7.	Maru	
8.	Prasuśruta or Prasuśravā	6400-6350 BCE
9.	Aṁbarīṣa	6350-6250 BCE
10.	Nahuṣa	
11.	Nābhāga	

Ikśvāku Kings of Kosala and Ayodhyā (4750-3162 BCE)

The Ikśvākus lost their political dominance after the reign of King Agnivarṇa and his wife around 4750 BCE. Thereafter, the Kurus and the Pāñchālas re-emerged as powerful kings in north and north-western India. We have absolutely no information of the Ikśvāku kings for the period between 4750-3450 BCE. The Mahābhārata and Purāṇas mention

that Ikśvāku king Brihadbala died in the Mahābhārata War (3162 BCE). Kosala and Ayodhyā were two different kingdoms during the Mahābhārata era. Dīrghayajña was the king of Ayodhyā and Brihadbala was the king of Kosala. Brihadbala supported Kauravas and was killed by Abhimanyu.

		In CE
1.	Śīghra II	3450-3400 BCE
2.	Maru II	3400-3370 BCE
3.	Prasuśruta II	3370-3330 BCE
4.	Susandhi	3330-3300 BCE
5.	Amarṣa	3300-3260 BCE
6.	Mahāsvat	3260-3230 BCE
7.	Viśrutavat	3230-3200 BCE
8.	Brihadbala	3200-3162 BCE

Ikśvāku Kings After the Mahābhārata War (3162-1710 BCE)

Brihatkśaya succeeded Brihadbala in the Kosala Kingdom. Purāṇas give the genealogy of Ikśvāku kings who flourished after the Mahābhārata War (3162 BCE). King Divākara was a senior contemporary of King Senajit of the Brihadratha dynasty of Magadha.

		In CE
1.	Brihatkśaya	3162-3100 BCE
2.	Urukriya	3100-3050 BCE
3.	Vatsavyūha	3050-3000 BCE
4.	Prativyoma	3000-2950 BCE
5.	Bhānu	2950-2900 BCE
6.	Divākara	2900-2850 BCE
7.	Sahadeva	2850-2810 BCE
8.	Brihadaśva	2810-2770 BCE
9.	Bhānuratha	2770-2720 BCE
10.	Pratitasya	2720-2680 BCE
11.	Supratīka	2680-2650 BCE
12.	Marudeva	2650-2610 BCE

13.	Sunakśatra	2610-2570 BCE
14.	Puṣkara or Kinnara	2570-2530 BCE
15.	Antarikśa	2530-2490 BCE
16.	Suvarṇa	2490-2450 BCE
17.	Sumitra or Amitrajit	2450-2410 BCE
18.	Brihatrāja	2410-2370 BCE
19.	Barhi	2370-2330 BCE
20.	Kritañjaya	2330-2290 BCE
21.	Ranañjaya	2290-2240 BCE
22.	Sañjaya	2240-2200 BCE
23.	Śākya	2200-2150 BCE

The Ikśvāku Dynasty of Kapilavastu (2150-1710 BCE)

Buddhist sources give the genealogy of Gautama Buddha starting from King Okkaka, and Purāṇas provide the list of the successors of King Śuddhodana. Undoubtedly, Ikśvāku is Okkaka in Prakrit. King Sumitra was a contemporary of the Nanda dynasty of Magadha. Mahāpadma Nanda annexed the kingdom of Ikśvākus around 1700 BCE. Seemingly, some of the descendants of King Sumitra had migrated to Andhra region along the Godavari and Krishna rivers. Vijayapuri, or Śriparvata, was the capital of Andhra Ikśvākus.

According to Mahāvastu, King Okkaka banished his legitimate sons and declared Jenta, the son of a concubine, as his successor. The legitimate sons of King Okkaka made Kapilavastu as their capital. King Simhahanu had four sons: Śuddhodana, Dhautodana, Śuklodana and Amritodana. Śuddhodana married Māyā, daughter of King Subhūti of the Koliya lineage. The Koliyas were the descendants of King Kola of Varanasi, who married a daughter of King Okkaka.

		In CE
24.	Okkamukha or Ulkāmukha	2150-2120 BCE
25.	Sivisañjaya	2120-2080 BCE
26.	Sihassara	2080-2040 BCE
27.	Jayasena	2040-2000 BCE

28.	Siṁhahanu	2000-1950 BCE
29.	Śuddhodana	1950-1900 BCE
30.	Siddhārtha	1920-1915 BCE
31.	Rāhula	1900-1850 BCE
32.	Prasenajit	1850-1820 BCE
33.	Kśudraka	1820-1790 BCE
34.	Raṇaka	1790-1760 BCE
35.	Suradha	1760-1730 BCE
36.	Sumitra	1730-1700 BCE

Early Ikśvāku Kings in Buddhist Sources

Mahāvastu, Mahavaṁśa, Dīpavaṁśa and Tibetan sources mention the following names of ancient Ikśvāku kings. Seemingly, Mahasammata flourished before Māndhātā (11150 BCE).

1. Mahāsammata
2. Roja or Rokha
3. Vararoja
4. Kalyāna
5. Varakalyana
6. Uposatha
7. Māndhātā
8. Charaka or Kāru
9. Upachara or Upakāru

Early Ikśvākus in Jainism

Twenty-two Tirthaṅkaras of Jainism belonged to the Ikśvāku dynasty. Jain sources also indicate that a branch of Ikśvākus reigned in Hastinapur before the Rāmāyaṇa era. Most probably, Ajitanātha, the second Tirthaṅkara, was the founder of a school of Lokāyata philosophy of Brihaspati. Gradually, the philosophical school of Ajitanātha had been evolved into the Nirgrantha tradition after the Mahābhārata era. Jainism evolved from the Nirgrantha tradition. The chronology of twenty-four Trithaṅkaras:

		In CE
1.	Riṣabhanātha (father of Bharata I and Bāhubali)	14310 BCE
2.	Ajitanātha (contemporary of Bhagīratha I, grandson of Sagara)	10900 BCE
3.	Sambhavanātha	
4.	Abhinandananātha	
5.	Sumatinātha (Vālmiki Rāmāyaṇa refers to Sumati)	
6.	Padmaprabha	
7.	Supārśvanātha	
8.	Chandraprabha	
9.	Puṣpadanta	
10.	Śītalanātha	Before Rāmāyana era
11.	Śreyaṅsanātha	
12.	Vasupūjya	
13.	Vimalanātha	
14.	Anantanātha	
15.	Dharmanātha	
16.	Śāntinātha	
17.	Kunthunātha	
18.	Aranātha	
19.	Mallinātha	
20.	Munisuvrata (He was a contemporary of the Rāmāyaṇa era but he did not belong to the Ikśvāku dynasty.)	5600 BCE
21.	Naminātha	4500 BCE
22.	Neminātha (He was a cousin brother of Sri Krishna of the Mahābhārata era.)	3200-3100 BCE
23.	Pārśvanātha	1539-1439 BCE
24	Mahāvira	1261-1189 BCE

(Entries 3–19 are bracketed together as "Before Rāmāyana era".)

The Origin of Videha or Mithilā Kingdom

Vaivasvata Manu's son, Nimi, was the progenitor of the kings of Videha

Kingdom. King Mithi was the son of Nimi. The name of Mithilā has been derived from Mithi. We have no information of the names of the sons of Mithi. Though Purāṇas speculate Videha as another name of Nimi but it seems King Videha Mādhava, son of Madhu, migrated from the banks of Sarasvati River to the banks of Sadānirā River (Gandaki) and established his kingdom. Taittirīya Kāṭhakam refers to King Janaka Vaideha and Rishi Gautama.[32] Evidently, King Janaka was the son of King Videha. Thus, "Videha" and "Janaka" became the royal titles of later kings of Videha Kingdom. Rishi Bhāradwāja Bārhaspatya refers to King Nami, son of Sāpya, in his hymn of Rigveda.[33]

We have to arrive at the dates of Bhāradwāja Bārhaspatya and Gautama Rāhūgaṇa to reconstruct the chronology of early Videha kings. Bhāradwāja, son of Brihaspati was adopted by King Bharata III. The genealogy of Bharata III of the Puru dynasty:

		In CE
1.	Richeyu	11220 BCE
2.	Atināra (His daughter Gauri married Ikśvāku king Yuvanāśva)	11200 BCE
3.	Tansu	11150 BCE
4.	Surodha or Malina	11100 BCE
5.	Dushmanta	11070 BCE
6.	Bharata III	11050 BCE
7.	**Bhāradwāja Bārhaspatya**	**11000 BCE**

Bhāradwaja Bārhaspatya (10650 BCE), the compiler of the sixth Mandala of Rigveda, was the descendant of Bhāradwaja Bārhaspatya. He refers to Videha king Nami Sāpya. The legend of Jaḍa Bharata indicates that King Rāhūgaṇa and Kapila were contemporaries of Jaḍa Bharata. King Sagara (11000-10950 BCE) was also a contemporary of Rishi Kapila. His sons killed Rishi Kapila. Gautama, a contemporary of King Videha and his son Janaka, was the son of King Rāhūgaṇa. King Ajātaśatru of Kāshi and King Aśvapati Kaikeya were contemporaries of King Janaka.[34] Aitareya Brāhmaṇa mentions Kratuvid, son of Janaka, who was a contemporary of Rishi Agni and King Sanaśruta Ariṅdama.[35]

Karāla was probably the son of Nami or Nemi. He might have forcibly carried off a Brāhmaṇa's daughter and married her as mentioned in Kautilya Arthaśāstra and Buddha Charita. Kautilya Arthaśāstra mentions that Bhoja Dānḍakya, son of Danḍaka (Ikśvāku's youngest son) and Karāla Janaka, forcibly married a Brāhamaṇa's daughter and lost his status as a king. The Mahābhārata mentions the names of ancient Videha kings like Aindradyumni and Daivarāti. Bālakānda of the Rāmāyaṇa (66.8) indicates that Devarāta was the eldest son of Nimi. Here is the chronology of Videha Kings:

		In CE
	Nimi	**11250 BCE**
1.	Devarāta & Mithi	11225 BCE
2.	Daivarāti	11200 BCE
3.	Indradyumna	11175 BCE
4.	Aindradyumni	11150 BCE
	....	
5.	Devamīḍha	11100-11050 BCE
	....	
6.	Madhu	11000-10970 BCE
7.	Videha Mādhava	10970-10920 BCE
8.	Janaka Vaideha	10920-10870 BCE
9.	Kratuvid Jānaka	10870-10830 BCE
10.	Dharmadhvaja	10830-10800 BCE
11.	Mitadhvaja	10800-10770 BCE
12.	Khānḍikya	10770-10730 BCE
13.	Sapya	10730-10700 BCE
14.	Nami or Nemi	10700-10670 BCE
15.	Karāla	10670-10630 BCE

Vishnu Purāṇa relates the story of Keśidhvaja and Khānḍikya, sons of Janaka King Mitadhvaja.[36] Most probably, Khānḍikya was the founder of Khānḍikeya branch of Taittirīyas; therefore, we can roughly fix the date

of Khāndikeya around 10750 BCE. Khāndikya was the scholar of Vedic Karma-mārga, whereas Keśidhvaja was the scholar of Ātmavidyā.[37]

कर्म्ममार्गेऽति खाण्डिक्यः पृथिव्यामभवत् कृती ।
केशिध्वजोऽप्यतीवासीदात्मविद्याविशारदः ॥

		In CE
1.	Dharmadhvaja	10830-10800 BCE
2.	Mitadhvaja and Kritadhvaja	10800-10770 BCE
3.	Keśidhvaja and Khāṇḍikya	10770-10730 BCE

We have only fragmentary information about the post-Vedic kings of Videha Kingdom because the Rigvedic era abruptly ended with the drying of Sarasvati River around 10950 BCE and weakening monsoons in north-western India after 11000 BCE. Garuda Purāṇa indicates that Ayodhyā king Prasuśruta's son Udāvasu became the King of Videha around 6400 BCE.[38] Purāṇas and the Rāmāyaṇa mention that King Sīradhvaja was the father of Sītā and flourished during the Rāmāyana era.

		In CE
	Prasuśruta (Ikśvāku King)	6400-6350 BCE
1.	Udāvasu	6370-6330 BCE
2.	Nandivardhana	6330-6300 BCE
3.	Suketu	6300-6270 BCE
4.	Devarāta	6270-6230 BCE
5.	Brihaduktha	6230-6200 BCE
6.	Mahāvīrya	6200-6170 BCE
7.	Dhritimān	6170-6130 BCE
8.	Sudhriti	6130-6100 BCE
9.	Dhriṣṭaketu	6100-6070 BCE
10.	Haryāśva	6070-6030 BCE
11.	Maru	6030-6000 BCE
12.	Pratitvaka	6000-5970 BCE
13.	Kīrtiratha	5970-5930 BCE
14.	Devamīḍha	5930-5900 BCE
15.	Vibudha	5900-5870 BCE

16.	Dhriti	5870-5830 BCE
17.	Kīrtirāja	5830-5790 BCE
18.	Mahāroma	5790-5750 BCE
19.	Svarṇaroma	5750-5710 BCE
20.	Hrasvaroma	5710-5680 BCE
21.	**Sīradhvaja (father of Sītā)**	**5700-5620 BCE**
22.	Bhānumat	5630-5580 BCE

King Bhānumat succeeded his father Sīradhvaja. Garuda Purāṇa gives the complete list of thirty descendants of King Bhānumat. Kriti was the last king of Videha Kingdom.

23.	Śatadyumna or Pradyumna	5580-5540 BCE
24.	Śuchi or Muni	5540-5500 BCE
25.	Urja or Urjavaha	5500-5470 BCE
26.	Sanadvāja or Sutadvāja	5470-5440 BCE
27.	Kuli	5440-5400 BCE
28.	Anañjana	5400-5370 BCE
29.	Kulajit	5370-5330 BCE
30.	Adhinemika	5330-5300 BCE
31.	Śrutāyu	5300-5260 BCE
32.	Supārśva	5260-5230 BCE
33.	Sriñjaya	5230-5200 BCE
34.	Kśemāri	5200-5170 BCE
35.	Anenas	5170-5140 BCE
36.	Rāmaratha	5140-5100 BCE
37.	Satyaratha	5100-5070 BCE
38.	Upaguru	5070-5040 BCE
39.	Upagupta	5040-5000 BCE
40.	Svāgata	5000-4970 BCE
41.	Svanara	4970-4930 BCE
42.	Suvarcha	4930-4900 BCE
43.	Supārśva	4900-4870 BCE

44.	Suśruta	4870-4840 BCE
45.	Jaya	4840-4800 BCE
46.	Vijaya	4800-4770 BCE
47.	Rita	4770-4740 BCE
48.	Sunaya	4740-4700 BCE
49.	Vītahavya	4700-4670 BCE
50.	Dhriti	4670-4630 BCE
51.	Bahulāśva	4630-4600 BCE
52.	Kriti	4600-4550 BCE

The Kingdom of Sāṅkāśya

Sāṅkāśya was a city close to Kānyakubja and Kāmpilya in Farrukhabad district of Uttar Pradesh. King Sudhanvā was ruling in this city during the Rāmāyaṇa era. He wanted to marry Sītā but King Janaka or Sīradhvaja defeated him and placed his brother Kuśadhvaja on the throne of Sāṅkāśya.

The Origin of Vaiśālī Kingdom

According to Purāṇas, King Viśāla, a descendant of Nābhanediṣṭha, the son of Manu, founded the city of Vaiśālī as his capital. King Viśāla was also a descendant of King Marutta Āvīkśita. The genealogy of Marutta Āvīkśita is given in seven Purāṇas. The Mahābhārata does not mention the names of Bhālandana and Vatsaprī. Rishi Vastaprī, son of Bhālandana, was the author of three Rigvedic hymns.[39]

Seemingly, the genealogy of Marutta Āvīkśita given in the Mahābhārata is more authentic than the genealogy given in the Purāṇas. The genealogy of Marutta Āvīkśita:

		In CE
1.	Manu Dandadhara	13850-13800 BCE
2.	Prajāti	13800-13770 BCE
3.	Kaśupa	13770-13730 BCE
4.	Ikśvāku	13730-13700 BCE
5.	Viṁśa	13700-13670 BCE

6.	Viviṁśa	13670-13630 BCE
7.	Khaninetra	13630-13600 BCE
8.	Suvarchasa	13600-13570 BCE
9.	Karandhama	13570-13550 BCE
10.	Avīkśita	13550-13530 BCE
11.	**Marutta Āvīkśita**	13530-13500 BCE

Six Purāṇas mention that Nāriṣyanta was the son of King Marutta Āvīkśita. There was another Nāriṣyanta who was a son of Manu. Triṇavindu, a descendant of Nāriṣyanta, lived around 11300-11250 BCE and his daughter Ilavilā married Rishi Pulastya. King Viśāla was the son of Triṇavindu and Apsarā Ālambuṣā. Thus, Nāriṣyanta was the son of a later king, named Marutta, and not Marutta Āvīkśita. Brahmāṇḍa Purāṇa gives the genealogy of Triṇavindu and Viśāla.[40]

		In CE
	Diṣṭa or Nediṣṭa (Son of Manu (Chākśuṣa Manu?))	11950-11900 BCE
1.	**Nābhāga**	11900-11850 BCE
2.	Bhālandana	11850-11800 BCE
3.	Vatsaprī	11800-11750 BCE
4.	Prāṅśu	11750-11700 BCE
5.	Marutta II	11700-11650 BCE
6.	Nāriṣyanta	11650-11600 BCE
7.	Dama	11600-11550 BCE
8.	Rāṣtravardhana	11550-11500 BCE
9.	Sudhriti	11500-11470 BCE
10.	Nara	11470-11430 BCE
11.	Kevala	11430-11400 BCE
12.	Bandhumat	11400-11370 BCE
13.	Vegavat	11370-11330 BCE
14.	Budha	11330-11300 BCE
15.	Triṇavindu	11300-11250 BCE

16.	Viśāla	11250-11220 BCE
17.	Hemachandra	11220-11200 BCE
18.	Suchandra	11200-11170 BCE
19.	Dhūmrāśva	11170-11130 BCE
20.	Sriñjaya	11130-11100 BCE
21.	Sahadeva	11100-11070 BCE
22.	Kriṣāśva	11070-11050 BCE
23.	Somadatta	11050-11020 BCE
24.	Janamejaya	11020-11000 BCE
25.	Pramati	11000-10950 BCE
	…………	
	Kākustha	5700-5650 BCE
	Sumati	5650-5600 BCE

The Rāmāyaṇa mistakenly calls Viśala as son of Ikśvāku because King Viśāla was a descendant of Manu. Atharvaveda refers to Takśaka as Vaiśāleya, i.e. son of King Viśāla. According to Bhāgavata Purāṇa, Takśaka belonged to the Ikśvāku dynasty. Seemingly, the descendants of Manu were also generally referred to as the Ikśvākus. King Sumati, son of Kākustha, flourished during the Rāmāyaṇa era. There is no further information of the Vaiśālī kings after Sumati.

Mallas and Licchạvis of Vaiśālī (5500-5300 BCE onwards)

Ancient Vaṁśāvalīs of Nepal relate that the lineage of Licchạvis belonged to the Ikśvākus. King Licchạvi was the eighth descendant of Sri Rāma. King Malla was the son of Chandraketu and the grandson of Lakśmaṇa. Therefore, we can roughly fix the dates of King Licchạvi and King Malla around 5500-5300 BCE. According to Manusmriti, Licchạvis and Mallas were the Vrātya Kśatriyas, which means Licchạvi and Malla were born to Kśatriya father and non-Kśatriya (Vaiśya or Śūdra) mother.[41] Mallas and Licchạvis formed a Gaṇasaṅgha in "Vrijji" janapada. The Mahābhārata refers to only Mallas. Probably, the Mallas dominated Vrijji gaṇa during the Mahābhārata era. After the Mahābhārata era, the Licchạvis

dominated Vrijji gaṇa of Vaiśālī. Licchavi King Manudeva of Vaiśālī was a contemporary of Gautama Buddha (1945-1865 BCE).

The Origin of Aśmaka Kingdom

King Aśmaka was the son of Ayodhyā king Saudāsa Kalmāṣapāda's queen Madayantī and Rishi Vasiṣṭha. Seemingly, King Aśmaka went south and established his kingdom between Godāvarī and Krishna rivers. He founded the city of Pauḍanya as his capital. Most probably, Bodhan city of Nizamabad district, Telangana, was the ancient city of Pauḍanya. The Rāmāyaṇa and the Mahābhārata relate the story of Kalmāṣapāda and his son Aśmaka. Aṅguttara Nikāya indicates the location of Aśmaka janapada in the south of Vindhyas. We have no information of the names of Aśmaka kings before the Mahābhārata era. Aśmaka king was on the side of Pāndavas in the Mahābhārata War (3162 BCE). Rishi Sumantu of the Mahābhārata era belonged to Aśmaka janapada.

It appears that the capital of Aśmaka Kingdom shifted from the city of Pauḍanya to the city of Kusumapura, also known as Puṣpapura, before the Rāmāyaṇa era. Āryabhaṭa (3173-3100 BCE) lived in the city of Kusumapura of Aśmaka janapada, which was a major center of astronomical studies in South India. There is folklore in South India that relates the story of Tana Simha and his son Krishna Simha. Tana Simha was a businessman of the city of Puṣpapura or Kusumapura of Aśmaka Janapada.

The Origin of Jammu Kingdom of Ikśvākus

Jammu region was part of Madra Kingdom during the early Rigvedic period. Madra Kingdom extended from the Sutlej River to the Indus River. Many rivers like Devikā, Apagā, Chandrabhāgā, Paruṣṇī, Irāvatī, Tausī, Urddha and Viśvāmitra flowed in this region. Devikā River was the sacred river of Jammu region. According to Vedic legends, King Vyuṣitāśva (13400 BCE?) of the Puru dynasty, a descendant of King Madra (son of Śibi [13550 BCE]) reigned over Madradeśa. His wife was Bhadrā Kakśīvatī. He had seven sons, four Madras and three Śālvas. Seemingly, the kingdom of Vyuṣitāśva was divided into seven parts. Traditionally, Śākala was the capital of Madras and Sialkot was the capital of Śālvas. The Śālvas were

a branch of Madras. Probably, the Asura kings of Hariyupiya (Harappa), controlled this region around 11500-11300 BCE. Indra (11325 BCE) uprooted Asura King Śaṁbara and annexed his kingdom. Kuru-Pāñchāla kings extended their kingdom up to Pir Panjal Hills in the North. Thus, Śālva (Sialkot) and Jammu-Kashmir region up to Neelum River became part of Kuru-Pāñchāla kingdom.

Most probably, a part of Kashmir Valley was a glacial lake known as Satisar during the Rigvedic period. This glacial lake was formed in Kashmir Valley during the period of Meltwater Pulse 1A around 12700-11500 BCE. The closed Varāhamula (Baramulla) Pass was holding the melted waters of glaciers. Probably a part of Hari Parvat of Srinagar was also under this glacial lake. According to Nīlamat Purāṇa, Piśāchas (a tribe of the early Rigvedic period) were living in Kashmir. Probably, they supported Asuras kings of Hariyūpīya. Pārvati requested Rishi Kaśyapa to come to Kashmir and asked to purify the area of Pāñchāla Giri (Pir Panjal region). Rishi Kaśyapa came to Anantanag area of Pir Panjal Hills along with his son Nīla Nāga (also known as Vīranāga) to support Śiva. Nīla Nāga or Vīranāga defeated Piśāchas. Rishi Kaśyapa and his son Vīranāga lived in Pir Panjal Hills. Therefore, Pir Panjal range might have come to be known as Kaśyapa-Meru (Kashmir).

At that time, one Asura named Jalodbhava occupied the island (Hari Parvat) in the middle of Kashmir's glacial lake and used boats to plunder the villages on the western side of Satīsar. Śiva and Vishnu tried their best to kill Jalodbhava but he used the heights of this island and somehow survived. Around 11200 BCE, a massive earthquake might have opened up Baramulla Pass and the water of Satisar had flown out of Kashmir Valley, which caused the great flood in Madra, Śālva, Sindh and Gujarat areas. Thus, Hari Parvat emerged out of Satisar and Jalodbhava perished. Kashmir Valley became habitable after 11200 BCE.

Nīla Nāga, son of Rishi Kaśyapa, became the first King of Kashmir. Nīlamat Purāṇa relates that Nīla Nāga exiled Sadulanāga from Kashmir due to his evil behavior. Nīla Nāga allotted the Mount Uśīraka in the land of Dārva (Jammu) to Sadulanāga. Nāga Mahapadma reigned at Wular Lake. Thus, the Nāgas established their reign in Jammu-Kashmir region

around 11200 BCE. Gradually, the Nagas gained the support of Piśāchas and emerged as political rivals to Kurus and Pāñchālas. According to legends, Babhruvāhana, son of Arjuna (Phalguna) and Nāga Princess Chitrāṅgadā of Jaiminīya Aśvamedha era (11050 BCE), came to Jammu region and founded the city of Babhrupura (known as Babor). Kalhaṇa refers to Babhrupura as Babbapura.

The legend of Sarpa Satra Yajña states that King Parīkśit was killed by the Nāga king Takśaka. Parīkśit's son Janamejaya performed Sarpa Satra Yajña and determined to kill Takśaka. Rishi Āstika, son of Jaratkaru and Mānasā, persuaded Janamejaya to set Takśaka free. Rishi Jaratkaru was a Yāyāvara Brāhmaṇa and married Mānasā, sister of Vāsuki (son of Rishi Kaśyapa and Kadru). Thus, Rishi Āstika was a junior contemporary of Kuru King Janamejaya of Āsandīvat. Most probably, the Sarpa Satra Yajña took place around 11225 BCE. Purāṇas mistakenly identified King Janamejaya of the Rigvedic era as the son of King Parīkśit of the Mahābhārata era.

Seemingly, the Nāga kings reigned over Jammu-Kashmir after 11000 BCE. We have no information of Nāga kings who reigned over Kashmir from 11000 BCE to 5000 BCE. We have also no information of the descendants of Babhruvāhana who reigned over Jammu region from 11050 BCE to 5000 BCE. According to the traditional history of Jammu, Ayodhyā king Sudarśan (4800 BCE) had two sons, Agnivarṇa and Agnigira. The younger brother Agnigira migrated to Shivalik Hills and settled in the region of present Kathua. He defeated the local kings and reigned at Bupanagari. He built the cities of Puṣpāvati. Kālidāsa abruptly ends the history of Raghu Vaṁśa after the death of Agnivarṇa (4800-4780 BCE). Seemingly, Ayodhyā Kingdom became politically vulnerable due to internal conflicts for succession after the death of Agnivarṇa. Kālidāsa states that Agnivarṇa's pregnant wife ascended the throne as the regent of unborn son of Agnivarṇa. This may be the reason why Agnigira had to immigrate to Jammu region. Vayusharb, son of Agnigira, succeeded him. Muni Uttamāchārya was his contemporary who lived in a Śiva temple at Airwan. He built the city of Airavati (known as Airwan today). Probably, Airavati was the wife of Vayusharb. After Vayusharb, Parmetra, Puran

Singh, Lakshman, Khat-joshan and Agnigarbha reigned over Jammu region. Agnigarbha had 18 sons. Bahu Lochan and Jambu Lochan were the sons of Agnigarbha. Bahu Lochan shifted his capital from Airwan to Dhārānagari, on the banks of Tawi. He founded the city of Bahunagar. He died in a conflict with Raja of Sialkot. Jambu Lochan, younger brother of Bahu Lochan, succeeded him and killed Rājā of Sialkot. He founded a vast kingdom. He also built a new city named 'Jambupura' (old Jammu town).

According to *Rajadarśani*, the Ikśvāku Kingdom was founded in Jammu region 550 years before the epoch of Kaliyuga but some traditional sources record that Jammu was founded 1999 or 900 years before the epoch of Kaliyuga. *Rajadarśani* also relates that there were twenty-two kings of Jammu line who ruled over Kashmir for 650 years. Another traditional source informs us that a total of fifty-five Jammu kings reigned over Kashmir for 1700 years. *Gulabnama* also records that fifty-five generations of Jammu rulers reigned over Kashmir. In all probability, Ikśvāku king Agnigira, brother of Agnivarṇa founded the rule of Ikśvākus in Jammu region 1999 years before the epoch of Kaliyuga. Therefore, we can roughly fix the date of Agnigira around 5100 BCE. A descendant of Agnigira conquered Kashmir and established the rule of Jammu kings around 4850 BCE. A total of thirty-three kings reigned over Jammu and Kashmir from 4850 BCE to 3900 BCE.

Seemingly, Jambu Lochan flourished around 3900 BCE and founded the city of Jambupura. He was a contemporary of King Chandrahāsa of Madradeśa. King Jambu Lochan defeated Chandrahāsa and took control over the Punjab. The Dogra tradition unambiguously indicates that Jambu Lochan flourished more than six centuries before the Mahābhārata era. His son Puran Karan succeeded him. King Puran Karan had two sons, Daya Karan and Dharma Karan. *Tarikh-e-Hasan* relates that Jammu Rājā Daya Karan sent a force led by his sons and conquered Kashmir. From this time onwards, Jammu rulers continued to reign over Kashmir for 653 years. Thus, King Daya Karan and his twenty-two descendants reigned over Kashmir for 653 years from 3850 BCE to 3190 BCE. King Somadatta was the last Jammu king of Kashmir. King Gonanda I established his supremacy over Kashmir around 3190 BCE and founded the rule of the Gonanda I Dynasty.

King Śiva Prakash, a descendant of King Śakti Karan, was ruling over Jammu during the Mahābhārata era. King Śalya of Madra Kingdom, the maternal uncle of Nakula and Sahadeva invaded Jambupura and annexed it. King Śiva Prakash took shelter in inner mountains. Many generations of King Śiva Prakash lived in mountains.

The Chronology of Jammu-Kashmir Kingdom up to the Mahābhārata Era:

		In CE
1.	Madra and Śālva Kings of Rigvedic period	13400-11500 BCE
2.	Piśāchas settled in Pir Panjal Hills	14000-11250 BCE
3.	Rudra and his descendants in Shivalik Hills of Jammu.	14000-11300 BCE
4.	Asura King Śaṁbara	11350 BCE
5.	Indra killed Śaṁbara	11325 BCE
6.	Śiva in Shivalik Hills and Kailash Parvat	11300-11200 BCE
7.	Rishi Kaśyapa in Kashmir	11250 BCE
8.	Nila Nāga or Viranāga in Anantanag	11250 BCE
9.	Sadulanāga in Jammu region	11240-11200 BCE
10.	Nāgas in Jammu and Kashmir	11250-4900 BCE
11.	King Babhruvāhana and his descendants in Jammu region	11050-5100 BCE
12.	Ikśvāku King Agnigira and his descendants in Jammu	5100 BCE
13.	33 Ikśvāku kings of Jammu reigned over Kashmir	4900-3900 BCE
14.	King Agnigarbha	3950-3910 BCE
15.	King Bahu Lochan	3910-3900 BCE
16.	**King Jambu Lochan**	3900-3870 BCE
17.	King Puran Karan	3870-3850 BCE
Kings of Kashmir Region		
1.	King Daya Karan and his descendants (Total 22 kings)	3850-3190 BCE
2.	King Somadatta (the 22nd King)	3200-3190 BCE

Kings of Jammu Region

1.	King Dharma Karan	3850-3820 BCE
2.	King Kirti Karan	3820-3800 BCE
3.	Agni Karan	3800-3777 BCE
4.	Śakti Karan	3777-3750 BCE
	………………	3750-3200 BCE
	Śiva Prakash of the Mahābhārata era	3200-3177 BCE

The Origin of Sindhu-Sauvira Kingdom

Sindh and Baluchistan regions of modern Pakistan were known as Sindhu-Sauvira Kingdom in ancient times. Suvira (13500 BCE), the founder of Sauvira Kingdom was the son of King Śibi (13550 BCE) of the early Vedic era. The kings of Sauvira Kingdom came to be known as Śaibyas or Śibis. These Shibi kings (near Quetta) still existed during the time of Alexander's invasion. Even today, the same region is known as Śibi. The Śibis were a branch of the Anu dynasty.

According to legends, Vichitra was the King of Sauvira in the beginning of Vaivasvata Manvantara (11200 BCE). He had two sons, Hingol and Sundar, who used to torment the people of Sauvira and Sindhudeśa. Ganesha, son of Śiva, killed Sundar and Devi killed Hingol who was hiding in a cave. Thus, the same cave came to be known as Hinglaj Devi Temple. After the death of Hingol and Sundar, King Ratnasena became the King of Sindh. Rishi Dadhīchi II provided shelter to the sons of Ratnasena when Paraśurāma killed him. The sons of Ratnasena came to be known as Brahmakśatriyas because they were disguised as Brāhmaṇas to avoid the wrath of Paraśurama. Jayasena, son of Ratnasena, succeeded him around 11150 BCE. Most probably, the earliest Sindh kingdom was located close to Rohri Hills.

Around 11150-11050 BCE, Saindhava (Jayadratha), son of Vriddhakśatra, was the King of Sindhudeśa. He married Duśśalā, daughter of Nāga King Dhritarāṣṭra. Since Arjuna had killed Saindhava, Durbuddhi, son of Dhritarāṣṭra and brother of Duśśalā, went to Manipura to kill Arjuna during the time of Dharmarāja's Aśvamedha. Later, Devakīputra

Krishna revived Suratha, son of Duśśalā, who was probably in coma. We have no information of Sindh history after Suratha because Vedic Sarasvati River had dried up around 10950 BCE and the entire Sapta-Sindhu region might have witnessed large scale migrations.

Archaeological sites like Mehargarh (7000 BCE) indicate the flourishing region of Sauviras of ancient times. The Rāmāyaṇa (5677-5577 BCE) refers to Sauvira Janapada and Sindhurāja (*Anūpam Sindurājasya*). Probably, the area from Anupgarh to Multan and from Multan to Larkana was the Sindhudeśa during the Rāmāyaṇa era. Archaeological sites like Mohenjo Daro and Kot Diji were remnants of the glorious kingdom of Sindh. The Mahābhārata also refers to Sauviras and Saindhavas.

The Roruka Dynasty of Sindh

The kings of Sindh were popularly known as Saindhavas. The Rorukas of Sūrya Vaṁśa had established their kingdom in the post-Vedic period. Ruruka was the founder of the Roruka dynasty of Sindh. Ikśvāku King Ruruka was the ancestor of Sri Rāma and flourished around 6560-6530 BCE. His descendants founded their kingdom in Sindh around 6500 BCE. They built the cities of Roruka (Mohenjo Daro) and Kot Diji during the post-Rāmāyaṇa era. Seemingly, Roruka (Mohenjo Daro) was the capital city of Roruka kings.

There was another Ikśvāku king named Ruru. According to Purāṇas, Devānīka, the eighth descendant of Sri Rāma, might have lived around 5400-5350 BCE. Devānīka had three sons: Ahināga, Rūpa and Ruru. Rurus or Rauravas were the descendants of Ruru. These Rurus settled at Thanesar (Sthāṇvīśvara) and came to be known as the Ror community. Thus, Rorukas reigned at Sindh whereas Rurus or Rauravas reigned at Sthāṇvīśvara.

Unfortunately, we have no genealogical lists of ancient Roruka kings of Sindh. Buddhist text Bhallatiya Jātaka and Jain texts (in the context of the story of Udayana and the city of Vītabhaya) relate that King Rudrāyana I and his son Shikhandi reigned over the city of Roruka. During the reign of King Shikhandi (around 3000 BCE), the city of Roruka (Mohenjo Daro) got wiped out in a major sandstorm. This may be the reason why the Roruka

city came to be known as Mohenjo Daro (mound of the dead men). Thus, the glorious Roruka dynasty declined abruptly after 3000 BCE.

Seemingly, some of the descendants of Roruka dynasty survived and migrated to Gujarat or Rajasthan. The legendary King Rai Diyach (2500 BCE?), a descendant of Roruka dynasty built the new city of Roruka on the banks of Indus River. A historic Hindu temple is situated in the middle of the Indus River on an island. Śarkarā janapada (known as Sukkur today) was located close to the new Roruka city. Pāṇini refers to Śarkarā Janapada.[42]

The Origin of the Rakkasapura Kingdom of Burma

Burma or Myanmar was also part of ancient India during the later Rigvedic period. According to Jaiminīya Aśvamedha, King Bhiṣaṇa, son of Baka, was reigning over Rakkasapura (known as Rakhine or Arakan in modern times) in Burma around 11100 BCE. The Aśvamedha horse of Dharmarāja entered Rakkasapura after crossing Nāripura of East Bengal. King Bhiṣaṇa had captured the Aśvamedha horse and challenged Arjuna but got killed. Thereafter, the horse reached Manipura where Arjuna's wife Chitrāṅgadā and his son Babhruvāhana lived.

The ancient legends of Burma relate that Bāhubali was the earliest king. The first section of the inscription of King Anandachandra gives the list of eight earliest rulers of Burma but only the titles of three kings, i.e. Bāhubali, Raghupati and Chandrodaya, have survived. Seemingly, Bāhubali, the son of King Riṣabha (14300 BCE), and the younger brother of Bharata (14275 BCE), became the king of the region of Bengal and Burma. It appears that King Baka and his son Bhīṣaṇa were the descendants of King Bāhubali. Thus, Burma was part of ancient Bhāratavarśa since the early Vedic era.

According to the inscription of Anandachandra, King Raghupati also reigned over Burma. Seemingly, King Raghu and his descendant Sri Rāma of the Ikśvāku dynasty extended their kingdom up to Burma around 6000-5600 BCE. Thus, Raghu Vaṁśa or Sūrya Vaṁśa reigned over Burma. The ancient chronicles of Arakan (Rakkasapura) relate that Vesali or Vaiśālī was the capital of Arakan in the pre-Mahābhārata era. Seemingly, the

kings of Vaishali extended their kingdom up to Burma during the pre-Mahābhārata era and founded the city of Vesali in Burma. Many kings reigned over Vesali. According to some other chronicles of Arakan, a son of a king of Varanasi founded his dynasty in Burma, and had his capital at Rāmavati. Around 4719 BCE, a barbaric foreign tribe invaded Vesali and rendered it without a king. King Marayu, probably, the son of a Brāhmaṇa Rishi drove the barbaric invaders away and established his rule in 4707 BCE. He founded the city of Dhānyavati, known as Dhanyawaddy, and reigned for sixty-two years. Buddha visited Dhānyavati Kingdom during his lifetime (1944-1864 BCE). Dvan Chandra founded the rule of the Chandra dynasty around 1055 BCE and had his capital at Vesali. Here is the chronology of Dhāntavati Kingdom of ancient Burma:

- The First Dhānyavati Period : 4707-2865 BCE
- The Second Dhānyavati Period : 2865-1962 BCE
- The Third Dhānyavati Period : 1962-1055 BCE
- The Reign of the Chandra Dynasty : 1055-364 BCE

The Chronology of Chandra Vaṁśa

The Manu and the Puru dynasties of the early Rigvedic era had been transformed into the Sūrya Vaṁśa and the Chandra Vaṁśa respectively in the post-Vedic era. Atri's son Soma II, or Chandra, was the progenitor of Chandra Vaṁśa and married many daughters of Prajāpati Dakśa. Budha II was the son of Soma II and Rohiṇī. Therefore, Budha was also known as Saumya Rohiṇeya. Budha married Ilā, daughter of Vaivasvata Manu. Purūravā, son of Ilā and Budha, founded the Aila dynasty and his capital was Pratiṣṭhāna (close to Prayāga). He married Apsarā Urvaśī and had two sons, Ayu and Amāvasu. Urvaśī left Purūravā after four years. Purūravā tried to take away the golden plates owned by the Brāhmaṇas of Naimiṣāraṇya but he got killed in this conflict. Ayu succeeded him in Pratiṣṭhāna whereas Amāvasu established his kingdom in Kānyakubja.

Rigveda clearly informs us that Urvaśī stayed with Purūravā only for four years. Purāṇas indicate that Purūravā had six sons but it is improbable to have six children in a period of four years. Seemingly, Purūravā had

only two sons, Ayu and Amāvasu. Viśvāyu, Śrutāyu, Śatāyu and Driḍhāyu were probably the sons of Puru I.

The Aila or Chandra Vaṁśa

		In CE
1.	Atri II	11325 BCE
2.	Soma II or Chandra	11290 BCE
3.	Budha II	11260 BCE
4.	Purūravā	11240 BCE
5.	Ayu & Amāvasu	11220 BCE

King Ayu and His Successors

King Ayu had five sons: Nahuṣa, Kśatravriddha, Rāji, Rambha and Anenas. Nahuṣa succeeded Ayu in Pratiṣṭhāna. His son was Yayāti. Yayāti had five sons: Yadu, Turvasu, Puru, Anu and Druhyu.

		In CE
1.	Ayu	11220 BCE
2.	Nahuṣa	11200 BCE
3.	Yayāti	11180 BCE
4.	Yadu II, Turvasu II, Puru III, Anu II & Druhyu II	11160 BCE

The Origin of Kāshi Kingdom

The Paurava kings were the earliest known rulers of Vārānasi. King Haryāśva and his descendants reigned around 11400-11175 BCE. Ayu's son Kśatravriddha was the progenitor of Kāshi kings. Kāśa was the grandson of Kśatravriddha who built the city of Kāshi.

		In CE
1.	Ayu	11220 BCE
2.	Kśatravriddha	11180 BCE
3.	Śunahotra	11150 BCE
4.	Kāśa, Kuśa or Śala and Gritsamada	11110 BCE

5.	Kāśya (Son of Kāśa)	11070 BCE
6.	Dīrghatapas	11040 BCE
7.	Dhanva	11000 BCE
8.	Dhanvantari or Divodāsa (the founder of Ayurveda)	10960 BCE
9.	Ajātaśatru (a contemporary of King Janaka)	10920-10850 BCE

The Origin of Kānyakubja Kingdom

Kānyakubja or Kanauj is one of the earliest cities of the Rigvedic period. Kuśanābha founded the city of Mahodayapuri. Gādhi (13525 BCE), son of Kuśanābha, was the greatest king of Mahodayapuri. Therefore, Mahodayapuri came to be known as Gādhipura. According to the Rāmāyaṇa, Kuśanābha had 100 daughters (Kanyās).[43] Vāyu (a descendants of Marut) had disfigured them (either abducted or violated them). Thus, these 100 Kanyās became Kubjas. Kuśanābha married off his 100 daughters to King Brahmadatta, son of Brahmarshi Chūli. Seemingly, the daughters of Kuśanābha became pregnant before marriage. Kāmpilya King Brahmadatta married them to reinstate their social status. Most probably, the sons and descendants of Brahmadatta came to be known as Kānyakubja Brāhmaṇas. Thus, the city of Gādhipura also came to be known as Kānyakubja.

Jahnu was also a celebrated king of Kānyakubja after Gādhi. Probably he brought the waters of Ganga to his capital. This may be reason why Ganga River is also called as Jāhnavī (daughter of Jahnu). Many Puranic historians inadvertently mixed up the genealogy of Jahnu I and Jahnu II and assumed Kuśa, the great grandfather of Viśvāmitra to be the son of Jahnu II. But Kuśa, Kuśanābha, Gādhi and Viśvāmitra I flourished around 13600-13450 BCE. According to Agni, Brahma, Harivaṁśa Purāṇas, Jahnu I was the son of Ajamīḍha II of the Paurava-Bharata dynasty. Ajamīḍha I was the great grandson of King Bharata the Great and lived around 13340-13300 BCE. Ajamīḍha II was a later descendant of Bharata Dynasty and flourished around 11560 BCE. Ajamīḍha II had three wives: Keśinī, Nīlī and Dhuminī. Keśinī was the mother of Jahnu I. Jahnu II was the descendant of Amāvasu.

		In CE
1.	Atithi	11650 BCE
2.	Suhotra II	11600 BCE
3.	Brihat	11580 BCE
4.	**Ajamīḍha II-Keśinī**	11560 BCE
5.	**Jahnu I**	11520 BCE
6.	Ajaka	11480 BCE
7.	Balākāśva	11440 BCE
8.	Kuśika I	11380 BCE
9.	Iṣiratha	11350 BCE
10.	Kuśika Aiṣirathi (Viśvāmitra II)	11325 BCE
11.	Gālava and Aṣṭaka	11300 BCE
12.	Lauhi	11275 BCE
13.	Kuśika II	11250 BCE
14.	Gāthi	11225 BCE
15.	Viśvāmitra III	11200 BCE

Gādhi was the father of Viśvāmitra I whereas Gāthi was the father of Viśvāmitra III. Many Puranic historians erroneously assumed them to be the same person. Sāyaṇa mentions another Viśvāmitra who was the son of Iṣiratha. Most probably, Viśvāmitra II was the son of Iṣiratha who was the father of Gālava and Aṣṭaka. The genealogy given Agni Purāṇa clearly indicates that Viśvāmitra II was the descendant of Bharata dynasty. This is the reason why Aitareya Brāhmaṇa[44] and Śāṅkhāyana Śrautasūtra[45] refer to Viśvāmitra II as "Bharatarṣabha" (a great leader of the Bharata dynasty). It is well known that Viśvāmitra I was the maternal grandfather of King Bharata. Viśvāmitra III Gāthina, the author of Rigvedic hymn, refers to Kuśikas, Viśvāmitras and Bharatas.[46] Evidently, Viśvāmitra Gāthina was a later descendant of Viśvāmitra I, son of Gādhi. Amāvasu, the brother of Ayu, established his kingdom in Kānyakubja. King Jahnu II married the granddaughter of Ikśvāku King Yuvanāśva (daughter of King Māndhātā).

		In CE
1.	Amāvasu	11200 BCE
2.	Bhima	11180 BCE
3.	Kanchana	11150 BCE
4.	Suhotra	11120 BCE
5.	Jahnu II	11100 BCE

Turvasu and His Descendants

Rigveda indicates that Turvaśas existed before the beginning of Vaivasvata Manvantara. Therefore, Turvasu, a son of Yayāti, must be identified as Turvasu II. The Yavanas of Gāndhāra and Kāmboja janapadas were the descendants of Turvaśa I. The Rāmāyaṇa mentions the origin of Yavanas from Kāmadhenu of Vasiṣṭha. Yavanas were the Yaudheya allies of Rishi Vasiṣṭha.

The Descendants of Druhyu II and the Origin of Tripura Kingdom

Rigveda indicates that Druhyus also existed before the beginning of Vaivasvata Manvantara. Therefore, Druhyu, a son of Yayāti, must be identified as Druhyu II. The descendants of Druhyu II migrated eastwards and established their kingdom in East Bengal. According to Rājamālā, a chronicle of the kings of Tripura written by King Dharma Manikya, King Tripura, the thirty-ninth descendant of Druhyu II established his kingdom.

1. Chandra
2. Budha
3. Purūravā
4. Ayu
5. Nahuṣa
6. Yayāti
7. Druhyu II
8. Babhru
9. Setu or Aṅgārasetu
10. Ānarta

24. Meghavarṇa
25. Vikarṇa
26. Vasuman
27. Kīrti
28. Kaniyān
29. Pratiśrava
30. Pratiṣṭhita
31. Śatrujit
32. Pratardana
33. Pramathi

11.	Gāndhāra	34.	Kālinda
12.	Dharma	35.	Kratha
13.	Dhrita	36.	Mitrari
14.	Durmada	37.	Baribarha
15.	Pracheta	38.	Karmuk
16.	Parachi	39.	Kaliṅga
17.	Parāvasu	40.	Bhīṣaṇa
18.	Parīkśit	41.	Bhānumitra
19.	Arijit	42.	Chitrasena
20.	Sujit	43.	Chitraratha
21.	Purūravā II	44.	Chitrāyudha
22.	Vivarṇa	45.	Daitya
23.	Purusena	46.	Tripura

It is difficult to validate the list of kings given in Rājamāla because there is no external evidence to support it but the traditional evidence cited by Rajamāla clearly indicates that the descendants of Druhyu II established their kingdom in Tripura.

The Origin of Gāndhāra Kingdom

Gāndhāra I, a descendant of Druhyu I, was the founder of Gāndhāra Kingdom. Aitareya Brāhmaṇa indicates that Nagnajit, son of Gāndhāra I, was a contemporary of Rishi Parvata and Nārada (11200 BCE). Therefore, we can roughly fix the date of Gāndhāra I around 11250 BCE. There was another King Gāndhāra II who was a descendant of Druhyu II. Ikśvāku King Yuvanāśva killed Aṅgāra, a grandson of Druhyu II.

		In CE
1.	Gāndhāra I	11250 BCE
2.	Nagnajit and Druhyu II	11220 BCE
3.	Babhru and Setu	11200 BCE
4.	Angārasetu (Son of Setu)	11180 BCE
5.	Ānarta or Aruddha	11150 BCE

6.	Gāndhāra II	11130 BCE
7.	Dhrita	11100 BCE
8.	Durdama	11070 BCE
9.	Pracheta	11030 BCE
10.	100 sons of Pracheta	11000 BCE

According to Vāyu Purāṇa, Dhrita was the son of Gāndhāra II. Durdama was the son of Dhrita and Pracheta was the son of Durdama. Pracheta had 100 sons who became the rulers of the northern kingdoms of Mlecchas (म्लेच्छराष्ट्राधिपाः सर्वे ह्युदीचीदिशमाश्रिताः). Seemingly, the Druze people of Syria, Lebanon, Israel and Jordan were the descendants of Druhyu II.

The Andhaka Lineage of Yadu Dynasty

King Andhaka, a son of Sātvata (11550-11500 BCE), was the progenitor of the lineage of Andhakas. He had four sons: Kukura, Bhajamāna, Śuchi and Kaṁbalabarhiṣa.

		In CE
1.	Andhaka	11500 BCE
2.	Kukura	11470 BCE
3.	Dhriṣṇu	11430 BCE
4.	Vahni	11400 BCE
5.	Dhriti	11370 BCE
6.	Viloma	11330 BCE
7.	Kapotaroma	11300 BCE
8.	Taittiri	11270 BCE
9.	Punarvasu	11250 BCE
10.	Abhijit	11230 BCE
11.	Ahuka	11200 BCE
12.	Devaka and Ugrasena	11180 BCE

King Ugrasena was the father of Kansa and King Devaka's daughter was Devakī. Vasudeva, a descendant of Vriṣṇi lineage married Devakī.

The Vriṣṇi Lineage of Yadu Dynasty

King Vriṣṇi, a son of Sātvata (11550-11500 BCE), was the progenitor of the lineage of Vriṣṇis. He had two sons, Sumitra and Yudhājit. Vasudeva and his son Devakīputra Krishna were the descendants of Vriṣṇi lineage.

		In CE
1.	Vriṣṇi	11510 BCE
2.	Yudhājit	11480 BCE
3.	Anamitra	11450 BCE
4.	Vriṣṇi II	11420 BCE
5.	Chitraratha	11390 BCE
6.	Vidūratha	11360 BCE
7.	Śini II	11340 BCE
8.	Śveta Vāhana	11320 BCE
9.	Pratikśatra	11290 BCE
10.	Svayambhoja	11260 BCE
11.	Hridika	11230 BCE
12.	Devamīḍhuṣa	11210 BCE
13.	Śūrasena	11190 BCE
14.	Vāsudeva	11170 BCE
15.	**Devakīputra Krishna**	**11150-11050 BCE**

The Origin of Pāñchālas

King Ajamīḍha II of the Bharata dynasty was the progenitor of Pāñchālas. Ajamīḍha had three wives: Keśinī, Nīlī and Dhūminī. The progeny of Nīlī came to be known as the Pāñchālas. Bāhyāśva, the great grandson of Ajamīḍha II and Nīlī, had five sons: Mudgala, Yavīnara, Vikrānta, Krimilāśva and Sriñjaya. Seemingly, King Bāhyāśva divided his kingdom into five provinces. Thus, the region reigned by five sons of Bāhyāśva came to be known as Pāñchāla.

		In CE
1.	Suhotra II	11600 BCE
2.	Brihat	11580 BCE

3.	**Ajamīḍha II-Nīlī**	11560 BCE
4.	Suśānti	11520 BCE
5.	Purujāti	11500 BCE
6.	Bāhyāśva	11470 BCE
7.	Mudgala, Yavīnara, Vikrānta, Krimilāśva and Sriñjaya I	11450 BCE

Sriñjaya Pāñchālas:

		In CE
1.	Sriñjaya II	11350 BCE
2.	Pañchajana	11300 BCE
3.	Somadatta	11275 BCE
4.	Suśānti	11250 BCE
5.	Sahadeva	11220 BCE
6.	Somaka	11200 BCE
7.	Jantu (he had 100 sons)	11170 BCE

A Branch of Sriñjaya Pāñchālas in Kāmpilya

		In CE
1.	King Priṣat (Grandson of Nīpa II)	11180 BCE
2.	Drupada	11160 BCE

King Priṣat was a friend of Rishi Bhāradwāja. His son Drupada and Droṇa were the pupils of Rishi Agniveśa. Bhāradwāja's son Droṇa married Kripī, daughter of Rishi Śardvān Gautama. Most probably, Pāñchāla King Yajñasena flourished in the Mahābhārata era (3162 BCE) whereas Drupada lived around 11160 BCE.

The Origin of Kurus

Kuru was the great grandson of King Ajamīḍha II and Dhūminī who founded his kingdom in Kurukśetra.

		In CE
1.	Suhotra II	11600 BCE
2.	Brihat	11580 BCE

3.	**Ajamīḍha II-Dhūminī**	11560 BCE
4.	Rikśa	11540 BCE
5.	Saṁvaraṇa	11520 BCE
6.	Kuru	11500 BCE

Kuru had many sons, namely, Sudhanvā, Sudhanu (Jahnu), Parīkśit, Pravara (Putraka) and Arimejaya. Parīkśit had four sons: Śrutasena, Agrasena, Janamejaya and Bhīmasena. King Pratīpa was a contemporary of King Brahmadatta II.

The progeny of King Parīkśit:

		In CE
1.	Parīkśit	11350-11300 BCE
2.	Janamejaya	11300-11270 BCE
3.	Suratha	11270-11230 BCE
4.	Vidūratha	11230-11200 BCE
5.	Rikśa II	11200-11170 BCE
6.	Bhimasena	11170 -11150 BCE
7.	Pratīpa	11220 11200 BCE
8.	Śāntanu, Devāpi and Bāhlīka	11200-11180 BCE
9.	Vichitravīrya (Son of Śāntanu)	11180-11160 BCE
10.	Dhritarāṣṭra	11160-11130 BCE
11.	Parīkśit	11130-11100 BCE
12.	Chandrāpīda and Sūryapīda	11100-11050 BCE
13.	Satyakarṇa (Son of Chandrāpīda)	11050-11020 BCE
14.	Śvetakarṇa (He had no sons. Śriviṣṭhā was his daughter. She was married Sukumāra)	11020-11000 BCE
15.	Sukumāra	11000-10970 BCE
16.	Paippalādi & Kauśika	10970-10930 BCE

Vāyu Purāṇa gives the genealogy of King Śāntanu II:[47]

		In CE
	Kuru	11500-11480 BCE
1.	Jahnu	11480-11460 BCE

2.	Suratha	11460-11440 BCE
3.	Vidūratha	11440-11420 BCE
4.	Sārvabhuma	11420-11400 BCE
5.	Jayatsena	11400-11380 BCE
6.	Arādhi	11380 -11360 BCE
7.	Mahāsatva	11360-11340 BCE
8.	Ayutāyu	11340-11320 BCE
9.	Akrodhana	11320-11300 BCE
10.	Devātithi	11300-11280 BCE
11.	Rikśa	11280-11260 BCE
12.	Bhimasena	11260-11240 BCE
13.	Dilīpa	11240 -11220 BCE
14.	Pratīpa	11220-11200 BCE
15.	Śāntanu, Devāpi and Bāhlīka	11200-11180 BCE

The Progeny of King Sudhanvā:

		In CE
1.	Sudhanvā	11350 BCE
2.	Suhotra	11320 BCE
3.	Chyavana	11300 BCE
4.	Krita (friend of Indra)	11275 BCE
5.	Uparichara Vasu	11250 BCE
6.	Brihadratha I	11225 BCE

Brihadratha, the progenitor of Brihadratha dynasty, was a descendant of Uparichara Vasu.

Devāpi Ārṣṭiṣeṇa and Śāntanu II

Rigveda refers to Kuru kings Riṣṭiṣeṇa and his sons Devāpi and Śāntanu. Devāpi became a rishi and his younger brother Śāntanu ascended the throne. The Kuru Kingdom was devastated by a twelve-year long drought during the reign of Śāntanu. The people blamed Śāntanu for the drought because a younger brother should not ascend the throne without the

permission of his elder brother. Therefore, Śāntanu requested his brother to take over the reins of kingdom. Devāpi performed a Varṣakāma Yajña for his brother Śāntanu and wrote a Varṣakāma Sūkta.[48] Seemingly, Devāpi and Śāntanu lived in the later Vedic period, around 10600 BCE. During the period 11000-9000 BCE, the region of Rajasthan, Gujarat, Haryana, Punjab, Pakistan and western Uttar Pradesh had often experienced long droughts due to weakening of monsoons.

		In CE
1.	Riṣṭiṣeṇa	10650 BCE
2.	Devāpi	10610 BCE
3.	Śāntanu II	10600 BCE

The frequent droughts in north and north-western India not only led to mass migration of people but also conflicts between Kurus and Pāñchālas. Sarasvati and Driṣadvatī rivers used to flow through the Kuru Kingdom. Pāñchālas might have invaded Kurukshetra to take control over the waters of Sarasvati and Driṣadvatī. Śāṅkhāyana Śrautasūtra refers to an ancient battle that occurred between the Kurus and the Pānchālas in which Kurus were exiled from Kurukshetra.[49] Most probably, the Kurus were driven out of Kurukshetra around 10500-10000 BCE. The Kurus had to migrate westwards and settled on the banks of Sindhu River in North Pakistan. Thus, the Uttarakuru janapada came into existence. Aitareya Brāhmaṇa refers to Uttarakuru and Uttaramadra janapadas.[50] Evidently, the Kurus had migrated to northern Pakistan many centuries before the lifetime of Mahīdāsa Aitareya.

Kuru-Pāñchālas of the Post-Vedic Period and the Rāmāyaṇa Era

The kings of Ikśvāku and Videha dynasties dominated over north and eastern India. Jain sources indicate that some Ikśvāku kings reigned over Hastinapur. The Pāñchālas of western Uttar Pradesh conquered the regions of Haryana and Punjab from the Kurus. Thus, the Kurus became politically insignificant during the post-Vedic period. During the Rāmāyaṇa era, the Pāñchālas were reigning over Kurujāṅgala. The messengers of Vasiṣṭha crossed a river at Hastinapur and reached Pāñchāla Kingdom in the region

of Kurujāṅgala on their way to Kekaya Kingdom. The Rāmāyaṇa refers to Uttarakuru janapada, located in the north of Śailodā River. Kīchaka type of bamboo trees grew on the banks of Śailodā River. The Śailodā River was also called as Nimnagā because it flows from North to South and merges with Vitastā or Jhelum River.

तम् तु देशम् अतिक्रम्य शैलोदा नाम निम्नगा।
उभयोः तीरयोः तस्याः कीचका नाम वेणवः ॥
ते नयंति परम् तीरम् सिद्धान् प्रत्यानयन्ति च।
उत्तराः कुरवः तत्र कृत पुण्य प्रतिश्रियाः ॥[51]

The Mahābhārata also mentions Śailodā River:

मेरुमन्दरर्योमध्ये शैलोदाम् अभितो नदीम्।
ये ते कीचक वेणूनां छायां रम्याम् उपासते ॥[52]

In my opinion, Śailodā River must be identified with the present Kishanganga or Neelum River of Kashmir and Pakistan. Teetwal, situated on the banks of Kishanganga River, is a famous place for bamboo cultivation. Thus, Uttarakuru janapada was located to the north of Kishanganga River.

Kuru-Pāñchālas of the Post-Rāmāyaṇa Era

The Kuru kings settled on the banks of Sindhu River during the post-Vedic period and the Rāmāyaṇa era because the Pāñchālas occupied the region of Haryana and Punjab. According to the Mahābhārata and Puranic legends, the Pāñchālas invaded Kurukshetra during the reign of Saṁvarṇa. King Saṁvarṇa, with his wife, sons, relatives and ministers took shelter in the forest on the banks of Sindhu River, extending to the foot of Hindukush Mountains. He lived there for a long time. After 1000 years, Rishi Vasiṣṭha reinstated him.[53]

Seemingly, there were three Kuru kings who had the same name of Saṁvarṇa. Saṁvarṇa I was the father of Kuru I, the founder of Kuru dynasty. Chronologically, the Kurus and the Pāñchālas came into existence at the same time. Therefore, there were no Pāñchālas during the lifetime of Saṁvarṇa I. Moreover, it is impossible that Saṁvarṇa I could live for 1000 years. It appears that Kuru king Saṁvarṇa II lost his kingdom to

the Śālvas around 10500-10000 BCE and migrated to North Pakistan. It appears that Rishi Vasiṣṭha might have brought back the descendants of the Kuru Dynasty (Saṁvarṇa III and Kuru II) from Uttarakuru and settled them in Kurukśetra after 1000 years, around 9500-9000 BCE. Though the Pāñchālas accepted the return of the Kurus to their ancestral kingdom, they continued to dominate the regions of Haryana and Punjab. This may be the reason why Kuru janapada came to be known as Kuru-Pāñchāla janapada.

We have almost no information of the genealogy of Kuru or Pāñchāla kings during the post-Vedic period and the Rāmāyaṇa era. Seemingly, the Kurus and the Pāñchālas re-emerged as the powerful kings after the decline of Ikśvākus around 4700 BCE. The Mahābhārata gives the following genealogy of the later Kuru kings.

	Later Kuru Kings	**Their wives**	**In CE**
1.	Puru	Kausalyā	4350-4300 BCE
2.	Janamejaya	Anantā	4300-4270 BCE
3.	Prachīnvān	Aśmaki	4270-4230 BCE
4.	Saṁyāti	Varāṅgī, Daughter of Driṣadvat	4230-4200 BCE
5.	Ahamyāti	Bhānumati, Daughter of Kritavirya II	4200-4170 BCE
6.	Sārvabhauma	Sunandā, Daughter of Kaikeya	4170-4130 BCE
7.	Jayatsena	Vaidarbhī	4130-4100 BCE
8.	Arāchina	Maryādā, princess of Vidarbha	4100-4070 BCE
9.	Mahābhauma	Suyajñā, daughter of Prasenajit	4070-4030 BCE
10.	Ayutanāyi	Bhāsā, daughter of Prithuśravas	4030-4000 BCE
11.	Akrodhana	Kālini Karandu	4000-3970 BCE
12.	Devātithi	Maryādā, daughter of Vaideha	3970-3930 BCE

13.	Richah	Sudevā, daughter of Aṅga	3930-3900 BCE
14.	Rikśa	Jabālā, daughter of Takśaka	3900-3870 BCE
15.	Matināra	Sarasvati	3870-3830 BCE
16.	Tansu	Kālindī	3830-3800 BCE
17.	Ilina [He had five sons]	Rathantari	3800-3770 BCE
18.	Duḥṣanta		3770-3730 BCE
19.	Bharata	Sunandā, daughter of Sarvasena, Kāshi king	3730-3700 BCE
20.	Bhumanyu	Jayā, daughter of Daśārha	3700-3670 BCE
21.	Suhotra	Suvarṇā, daughter of Ikśvāku King	3670-3630 BCE
22.	Hasti II	Yaśodharā, princess of Traigarta	3630-3600 BCE
23.	Vikunthina	Sudevā, Princess of Daśārha	3600-3570 BCE
24.	Ajamīḍha II (He had many wives and 124 sons)	--	3570-3530 BCE
25.	Saṁvaraṇa IV	Tapatī, daughter of Vaivasvata	3530-3500 BCE
26.	Kuru III	Shubhāṅgī Dāśārhī	3500-3470 BCE
27.	Vidūratha	Saṁpriyā Māgadhī	3470-3430 BCE
28.	Arugvan	Amritā Māgadhī	3430-3400 BCE
29.	Parīkśit	Suyaśā Bāhudāma	3400-3370 BCE
30.	Bhimasena	Sukumārī Kaikeyi	3370-3330 BCE
31.	Paryaśravas	Sunandā Śaivyā	3330-3290 BCE
32.	Śāntanu	Gangā Bhāgirathī and Satyavati	3290-3240 BCE
33.	Vichitravīrya	Ambikā and Ambālikā	3240-3210 BCE

34.	Dhritarāṣṭra	Gāndhāri	3210-3162 BCE
35.	Yudhiṣṭhira		3162 BCE

King Parīkśit and His Descendants

		In CE
1.	Parīkśit (Son of Abhimanyu and grandson of Arjuna)	3125-3100 BCE
2.	Janamejaya	3100-3060 BCE
3.	Śatānīka	3060-3030 BCE
4.	Aśvamedhadat	3030-3000 BCE
5.	Adhisīma Krishna	3000-2970 BCE
6.	Nichaknu	2970-2930 BCE
7.	Uṣṇa	2930-2900 BCE
8.	Chitraratha	2900-2870 BCE
9.	Śuchiratha	2870-2830 BCE
10.	Vriṣṇimanta	2830-2800 BCE
11.	Suṣeṇa	2800-2770 BCE
12.	Sunītha	2770-2730 BCE
13.	Nripegakśu	2730-2700 BCE
14.	Sukhibala	2700-2670 BCE
15.	Pariplava	2670-2630 BCE
16.	Sunaya	2630-2600 BCE
17.	Medhāvi	2600-2570 BCE
18.	Ripuñjaya	2570-2530 BCE
19.	Urva	2530-2500 BCE
20.	Thigma	2500-2470 BCE
21.	Brihadratha	2470-2430 BCE
22.	Kasudana	2430-2400 BCE
23.	Śatānīka II	2400-2370 BCE
24.	Udayana	2370-2330 BCE
25.	Kihinara	2330-2300 BCE

26.	Danḍapāṇi	2300-2370 BCE
27.	Nirāmitra	2370-2330 BCE
28.	Kśemaka	2330-2300 BCE

The Brahmadatta Lineage of Puru Dynasty

There were two Brahmadattas. Brahmadatta I was a son of Rishi Chūli as mentioned in the Rāmāyaṇa. He became the King of Kāmpilya and reigned around 13550 BCE. Brahmadatta II was the son of Puru King Anūha and Kīrtimatī, daughter of Rishi Śuka I (Śuka II was the son of Veda Vyāsa). He was a contemporary of Kuru King Pratīpa. Rishi Gālava II, the founder of Śikśā and Krama-Pātha of Vedas, was a classmate of Brahmadatta II. Harivaṁśa gives the following genealogy of Brahmadatta II.[54]

		In CE
1.	Brihatkśatra	11750 BCE
2.	Suhotra	11730 BCE
3.	Hasti (the founder of Hastinapur)	11700 BCE
4.	Ajamīḍha, Dvimīḍha and Purumīḍha	11670 BCE
5.	Brihadiśu (Son of Ajamīḍha)	11630 BCE
6.	Brihaddhanu	11600 BCE
7.	Brihaddharma	11570 BCE
8.	Satyajit	11530 BCE
9.	Viśvajit	11500 BCE
10.	Senajit	11470 BCE
11.	Ruchira, Śvetaketu, Mahimnāra and Vatsa Āvantaka	11430 BCE
12.	Prithusena (Son of Ruchira)	11400 BCE
13.	Pāra	11380 BCE
14.	Nīpa (he was the founder of Nīpa Vaṁśa and had 100 sons)	11360 BCE
15.	Kīrtivardhana (King of Kāmpilya)	11340 BCE
16.	Samara	11320 BCE
17.	Para, Pāra II and Sadaśva	11300 BCE
18.	Prithu (Son of Para)	11280 BCE

19.	Vibhrāja	11260 BCE
20.	Anūha	11240 BCE
21.	Brahmadatta II	11220 BCE
22.	Viśvaksena and Sarvasena	11200 BCE
23.	Danḍasena	11180 BCE
24.	Bhallāṭa (killed by Rādheya Karṇa)	11160 BCE
25.	Nīpa II, Son of Bhallata (He was a contemporary of Ugrāyudha. The Nīpa dynasty declined after the reign of Nīpa II.)	11140 BCE

The Ugrāyudha Lineage of Puru Dynasty

Harivaṁśa gives the following genealogy of Ugrāyudha.

		In CE
1.	Ajamīḍha	11560 BCE
2.	Yavīnara	11520 BCE
3.	Dhritimān	11480 BCE
4.	Satyadhriti	11440 BCE
5.	Driḍhanemi	11400 BCE
6.	Sudharma	11360 BCE
7.	Sārvabhauma	11325 BCE
8.	Mahān	11300 BCE
9.	Rukmaratha	11275 BCE
10.	Supārśva	11250 BCE
11.	Sumati	11225 BCE
12.	Sannati	11200 BCE
13.	Krita	11175 BCE
14.	Ugrāyudha (eliminated Nīpa II, King of Pāñchāla)	11150 BCE
15.	Kśemya	11120 BCE
16.	Suvīra	11080 BCE
17.	Nripañjaya	11050 BCE
18.	Bahuratha	11000 BCE

The Atināra Lineage of Paurava Dynasty

Richeyu, a descendant of Paurava Dynasty, married Jvalanā, daughter of Nāga king Takśaka. His son was Atināra or Matināra. Atināra's daughter Gauri was the wife of Ikśvāku King Yauvanāśva and the mother of King Māndhātā.

		In CE
1.	Richeyu	11220 BCE
2.	Atināra (His daughter Gauri married Ikśvāku King Yuvanāśva)	11200 BCE
3.	Trasu, Apratiratha, Dhruva and Gaurī	11180 BCE
4.	Surodha or Malina (Son of Trasu)	11150 BCE
5.	Duṣmanta and Suṣmanta	11120 BCE
6.	Bharata III (He had three wives and nine sons. All nine sons were killed by their own mothers.)	11080 BCE
7.	**Bhāradwāja Bārhaspatya Dvāmuṣyāyaṇa** (adopted by Bharata III)	**11030 BCE**
8.	Vitatha	11000 BCE
9.	Bhuvamanyu	10950 BCE
10.	Nara, Brihatkśatra, Mahāvīrya and Gārgya	10920 BCE
11.	Sankriti (Son of Nara)	10880 BCE
12.	Rantideva (A great king)	10850 BCE

The Aṅga Lineage of Anu I Dynasty

King Bali, a contemporary of Rishi Dīrghatamā Māmateya (13500-13450 BCE), had five sons: Aṅga I, Vaṅga, Kaliṅga, Punḍra and Suhma. Dadhivāhana was the descendant of Aṅga II.

		In CE
1.	Bali	13500-13450 BCE
2.	Aṅga I, Vaṅga, Kaliṅga, Punḍra, Suhma	13450-13400 BCE
3.	Anapāna	13400-13370 BCE
	…………	
4.	Aṅga II	11650 BCE
5.	Dadhivāhana	11620 BCE

6.	Diviratha	11590 BCE
7.	Dharmaratha	11570 BCE
8.	Chitraratha	11530 BCE
9.	Daśaratha (He was injured in a war against Asura Timidhvaja, also known as Śaṁbara.)	11500 BCE
10.	Chaturaṅga	11470 BCE
11.	Prithulāśva	11430 BCE
12.	Champā (founded the city of Champā)	11400 BCE
13.	Haryaṅka or Haryaṅga	11375 BCE
14.	Bhadraratha	11350 BCE
15.	Brihatkarmā	11325 BCE
16.	**Brihadarbha or Brihadratha (a celebrated king of Aṅgas)**	**11290 BCE**
17.	Brihanmanā	11270 BCE
18.	Jayadratha	11240 BCE
19.	Driḍharatha	11220 BCE
20.	Janamejaya	11200 BCE
21.	Karṇa	11175 BCE
22.	Vikarṇa (He had 100 sons.)	11150 BCE

Brihanmanā had two wives, Yaśodevi and Satyā. Jayaratha was the son of Yaśodevi and Vijaya was the son of Satyā.

		In CE
1.	Brihanmanā	11270 BCE
2.	Vijaya	11250 BCE
3.	Dhriti	11230 BCE
4.	Dhritavrata	11210 BCE
5.	Satyakarma	11190 BCE
6.	Adhiratha (He was a Sūta.)	11170 BCE
7.	Karṇa (Sūtaputra)	11150 BCE
8.	Vriṣasena and Meghavarṇa	11120 BCE
9.	Vriṣa	11080 BCE

The Origin of Haihayas and Talajaṅghas

Haihayas were the descendants of King Vītihotra and Śaryāti of the Puru dynasty. Yadu II had five sons: Sahasrāda, Payoda, Kroṣṭā, Nīla and Añjika. Sahasrāda had three sons: Haihaya, Haya and Veṇuhaya. Arjuna Kārtavīrya, the descendant of Haihaya, defeated Karkoṭa Nāga and occupied his ancestral city of Māhiṣmatī. He had many sons but Paraśurāma killed all of them except five, namely, Śūra, Śūrasena, Vriṣasena, Madhu and Jayadhwaja. Madhu's son was Vriṣṇi and Jayadhwaja's son was Talajaṅgha. Vītihotra was the son of Talajaṅgha and the founder of Vītihotra dynasty in Avanti. Vītihotras, Śāryatas, Bhojas, Avantis and Tundikeras were known as five lineages of Vītihotras.

	Early Haihaya Kings	**In CE**
1.	Yadu II	11600-11570 BCE
2.	Sahasrāda or Sahasrajit	11570-11530 BCE
3.	Haihaya	11530-11500 BCE
4.	Dharma	11500-11460 BCE
5.	Dharmanetra	11460-11420 BCE
6.	Kunti	11420-11380 BCE
7.	Sahajit or Sāhanja	11380-11350 BCE
8.	Mahiṣmān (founder of the city of Māhiṣmatī)	11350-11325 BCE
9.	Bhadraśreṇya	11325-11300 BCE
10.	Durdama	11300-11260 BCE
11.	Dhanaka	11260-11225 BCE
12.	Kritavīrya	11225-11200 BCE
13.	Arjuna Kārtavīrya	11200-11150 BCE
14.	Jayadhvaja	11150-11130 BCE
15.	Tālajaṅgha	11130-11100 BCE
16.	Vītihotra, Sujāta and Bhoja	11100-11070 BCE
17.	Ananta (Son of Vītihotra)	11070-11030 BCE
18.	Durjaya Amritakarṣaṇa	11030-11000 BCE

The Origin of Chedi Kingdom

According to Purāṇas, Kaiśika was the fifth descendant of King Lomapāda, son of King Vidarbha. Kaiśika's son Chedi (12050-12000 BCE) was the founder of the Chedi dynasty. Chedi is mentioned in Rigveda.[55] King Uparichara Vasu of the Kuru dynasty conquered the Chedi Kingdom. Brihadratha, son of Uparichara Vasu, founded the Brihadratha dynasty of Magadha. Subāhu, son of Chedi King Virabāhu, was a contemporary of Ikśvāku King Rituparṇa of Ayodhyā.

The Origin of Pāndya, Kerala (Chera), Chola and Kolla Kingdoms (11400 BCE)

According to Vāyu Purāṇa, Vahni, a descendant of Turvaśa, was the forefather of the Pāndyas, Keralas (Chera), Cholas and Kollas. Marutta, the fifth descendant of Vahni, adopted Duṣkrita or Duṣmanta, a son of King Raibhya of the Puru dynasty. The Pāndya, Kerala, Chola and Kolla were the sons of King Janāpīda or Ahrīda, and founded their kingdoms before the lifetime of Vaivasvata Manu and Rishi Agastya. Kollas settled in Kollagiri in northern Kerala.

		In CE
	Turvaśa	
	....	
1.	**Vahni or Varga**	**11700 BCE**
2.	Gobhānu	11650 BCE
3.	Trisānu	11620 BCE
4.	Karandhama	11580 BCE
5.	**Marutta**	11550 BCE
	The Puru Dynasty	
6.	Duṣkrita or Duṣmanta (adopted by Marutta)	11500 BCE
7.	Śarūtha or Varūtha or Karūtha	11470 BCE
8.	Janāpīda or Gānḍīra	11430 BCE
9.	Pāndya, Kerala (Chera), Chola and Kola (Kulya) (also Gāndhāra as per Agni Purāṇa)	11400 BCE

The Chronology of Pāndyas

		In CE
	Pāndya – The progenitor of Pāndyas	11400 BCE
1	Kulaśekhara Pāndya	11325 BCE
2	King Malayadhvaja Pāndya and his wife Kāñhanamālā	11300BCE
3	Mīnākśī (married Śiva)	11275 BCE
4	Ugra Pāndyan or Murugan (Son of Mīnākśī and Śiva)	11250 BCE
5-93	First Sangam Period – 4400 years (89 important Pāndya kings from Kayasina Valudi to Kadungan reigned in Thenmadurai)	11226-6826 BCE
94-152	Second Sangam Period – 3700 years (59 important Pāndya Kings from Venderchelian to Mudattirumaran reigned in Kavatapuram)	6826-3126 BCE
	King Jayamahākīrti or Nilam Taru Tiruvan Pāndyan (Tolkappiyar, the author of Tolkappiyam was in his court)	5500 BCE
152-200	Third Sangam Period -1850 years (49 Pāndyan kings from Mudattirumaran to Ukkiraperu Valudi reigned in Madurai)	3126-1276 BCE

The Chronology of Cholas

According to Manimekhalai and Tamil legends, Kāveri River was released from his water vessel (Kamandal) by Rishi Agastya in response to the prayer of Chola King Kantan, or Kantaman. *Kalingattuparani* and *Vikramacholan Ula* indicate that King Kantan was the earliest known king of Cholas and a contemporary of Rishi Agastya and Paraśurāma. He was also a contemporary of King Tondaiman. The legends of Vada Thirumullaivayil indicate that King Tondaiman was a junior contemporary of Śiva and Murugan. Therefore, we can roughly fix the date of Chola King Kantan around 11250-11150 BCE. King Kantan gave his kingdom to his illegitimate son, Kakandan, in order to escape from Paraśurāma.

Kakandan ruled from the city of Champā, which came to be known as Kākandi, Puhar and Kaveripattanam. Sangam literature refers to another Chola king, Tungeyilerinda Todittot Sembian, a descendant of Śivi, who destroyed the forts of Asuras. He started the celebration of Indra festival for twenty-eight days at the instance of Rishi Agastya (a descendant of Agastya).

According to Purāṇas and Tamil sources, Chola was a brother of Pāndya. Evidently, ancient Cholas were the descendants of the Puru or Chandra dynasty. Later, the Chola dynasty of Tamil Nadu had been mixed up with the Ikśvāku kings of Andhra. Thus, many Telugu Choda lineages (Velanati, Renati, Pottapi, Mudigonda and more) came into existence. This may be the reason why the later Cholas claim their origin from Sūrya Vaṁśa. The Charala plates and Kanyakumari inscription of Vira Rajendra Chola give the following chronological list from Brahma to Vijayālaya:

1.	Brahma	19.	**Chola**
2.	Marīchi	20.	Rājakesari
3.	Kaśyapa	21.	Parakesari
4.	Vivasvān	22.	Mrityujit
5.	Ikśvāku	23.	Vīrasena
6.	Vikukśi	24.	Chitra
7.	Purañjaya	25.	Puṣpaketu
8.	Kakustha	26.	Ketumāla
9.	Prithu	27.	Samudrajit
10.	Kuvalāśva	28.	Pañchapa
11.	Māndhātā	29.	Nrimrida
12.	Muchukunda	30.	Manoratha
13.	Hariśchandra	31.	Perunatkilli
14.	Sagara	32.	Karikāla
15.	Bhagīratha	33.	Vallabha
16.	Rituparṇa	34.	Jagadekamalla
17.	Dilīpa	35.	Vyālabhayankara
18.	Rāma, Lakśmaṇa, Bharata, Śatrughna	36.	Vijayālaya, the founder of later Chola dynasty

The Rāmāyaṇa refers to the kingdom of Cholas. Therefore, it is chronologically absurd to establish King Chola as a descendant of Sri Rāma. Seemingly, the Chandra Vaṁśa of the Cholas and the Sūrya Vaṁśa of the descendants of King Aśmaka or King Danḍaka were mixed up after the Rāmāyaṇa era.

Traditionally, the Cholas had three surnames: Killi, Valavan and Sembian. According to Vīracholīyam, Sembian means a descendant of King Śivi. Probably, Sembians or descendants of Śivi also settled in Tamil Nadu and became a lineage of Cholas, being Chandra Vaṁśis. Ancient Tamil sources mention the names of 122 Chola kings who reigned around 5000-1020 BCE.

	In CE
Chola – The progenitor of Cholas and a younger brother of Pāndya	11400 BCE
King Kantan Chola	11250-11150 BCE
Kakandan	11150-11100 BCE
Tungeyilerinda Todittot Sembian	10800 BCE
Manu Nithi Cholan	6000 BCE?
122 ancient Chola kings	5000-1020 BCE
Kalabhras	1020-720 BCE
26 Chola kings	700 BCE – 435 CE

Before the rise of Vijayālaya (150-180 CE), the lineage of Muttarayar ruled in Tanjavur. The city of Tanjavur was the capital of Muttarayar kings. The name of Tanjavur city is derived from the name of Tananjaya (Dhanañjaya or Arjuna). It is traditionally believed that Muttarayars came from North. Seemingly, Sūrya Vaṁśi Cholas of Andhra Pradesh, known as Muttarayar, occupied the Chola Kingdom around 600-500 BCE as allies of the Pallavas. Vijayālaya, a descendant of another branch of Cholas, conquered the Chola Kingdom from Elango Muttarayar, the last king of the Muttarayar dynasty.

The Origin of Keralas or Cheras

Purāṇas and Tamil sources inform us that Chera or Kerala was a brother

of Pāndya and belonged to Chandra Vaṁśa. Seemingly, three brothers, Pāndya, Chola and Chera settled in Tamil Nadu around 11400 BCE. Mudināgarāyar eulogises his contemporary Chera king Cheraman Peruncheraladan in his poem "*Puranānūru*" (Puram 2). Kulaśekhara Varman or Kulaśekhara Alwar was also a Chera king. According to legends, he was born in the 27th year of Kaliyuga, i.e., the epoch of Mahābhārata war and the Yudhiṣṭhira era (3162 BCE). Thus, the Chera king Kulaśekhara Varman was born in 3133 BCE.

The Origin of Kolas and Muśika Vaṁśa

Kola or Kulya was also a brother of Pāndya. He settled at Ezimala Hill that came to be known as Kollagiri. The Mahābhārata refers to Kollagiri. Kolas reigned at Kolam city (Kolathunadu) in North Kerala. When Paraśurāma came to North Kerala, Kolas migrated to a place close to Tiruvanantapuram to escape from the fury of Paraśurāma. Thus, Kollam city of South Kerala became the capital of Kola kings.

After Kolas, the kings of the Muśika dynasty (a branch of Kolas) reigned over North Kerala. Sanskrit poet Atula's *Muśikavaṁśa Kāvya* tells us that the Mūśika kings originally belonged to Māhiṣmatī and the descendants of the Haihayas. Rishi Paraśrāma coronated one son of the first migrated princess from Māhiṣmatī as the king of Elimala (Ezhimala), and he came to be known as Rāmaghata Mūśika. The Ezhimala Hill or Kollagiri also came to be known as Muśika Parvata. Kolam city (not Kollam) of North Kerala was the ancient capital of Muśikas.

The Mahābhārata, Purāṇas, Sangam literature and epigraphic records all refer to the kingdom of Mūśika dynasty. Atula's *Mūśikavaṁśa Kāvya* mentions 118 kings of the Muśika dynasty. King Srikanthan was the 118th king who lived at the end of the 4th century CE. The Muśika dynasty had declined after the 4th century CE. The Chera dynasty and Cheraman Perumals of Mahodayapuram also declined gradually by the 12th century CE. During this period, the Kolas re-established themselves in North Kerala as Kolathiri kings.

The Origin of Tondaiman Dynasty, the Kings of Tondaimandalam and Pallavas

King Tondaiman was the earliest king of Tondaimandalam of Tamil Nadu. He was a junior contemporary of Śiva and lived around 11250-11150 BCE. In all probability, Danḍa or Danḍaka was called Tondaiman in Tamil Nadu. According to Uttarakānda of the Rāmāyaṇa, Danḍaka was the youngest son of Ikśvāku. Ikśvāku banished Danḍaka from his kingdom due to his ruthless behaviour. Kautilya Arthaśāstra indicates that Bhoja was a son of Danḍaka who forcibly married a Brāhmaṇa girl.[56]

According to another legend, Danḍaka went south of Vindhyas and established his kingdom close to Dandakāraṇya. He wanted to marry a daughter of Śukrāchārya but she refused to marry him. One day, Danḍaka forcibly entered the Ashrama of Śukrāchārya and violated his daughter. Enraged Śukrāchārya ordered his disciples to punish Danḍaka. Possibly, Danḍaka had to leave his kingdom of Danḍakāraṇya. He settled in the region of Kānchipuram. At that time, Śiva was also in the region of Kānchipuram. Śiva was married to Kāmākśī Ammal of Kānchipuram. According to Tamil legends, King Tondaiman built Śiva temple of Tirumullaivayil near Avadi, Chennai. He established his kingdom in Tonadaimandalam with the help of Śiva and Nandi. Traditionally, the descendants of King Tondaiman reigned in the region of Kānchipuram.

The Sangam era poetess, Avvaiyar (1400-1300 BCE), a contemporary of Kambar (the author of Kambaramayanam), mentions King Tondaiman Ilandirayan in her poem *Purunanuru*. King Tondaiman Ilandirayan was in conflict with the Velir king Athiyaman. He was the progenitor of the lineage of Pallavas. According to *Kalingattuparani*, Karunakara Tondaiman, a Pallava prince conquered Kaliṅga serving as Sthalapati under Kulottuṅga Chola I (410 CE). Evidently, the Pallavas were the descendants of Ikśvāku King Danḍaka.

The Origin of Velir or Draviḍa or Sattiyaputta Kings

Bhāgavata Purāṇa relates that Devakīputra Krishna married Jāmbavatī, daughter of King Jāmbavān. Draviḍa was a son of Krishna I and Jāmbavatī. Seemingly, the descendants of Draviḍa migrated to South India and established their kingdom in the region close to Tondaimandalam. Tamil

sources tell us that the Velir kings (Satyaputras or Draviḍas) came from the city of "Tuvarai" or Dvāravatī (Dwārakā) under the leadership of Rishi Agastya (a descendant of Maharshi Agastya). As already discussed, Dvāravatī was submerged by sea around 9400-9300 BCE. According to the Mahābhārata, Sahadeva subjugated Draviḍas. Draviḍa kings also supported Pāndavas in the Mahābhārata War.

The chronology of Velirs or Draviḍas:

		In CE
1.	Devakīputra Krishna	11150-11050 BCE
2.	Draviḍa – The progenitor of Draviḍas	11100 BCE
3.	49 Velir or Draviḍa kings reigned at Dwārakā	11050-9400 BCE
4.	Migration of the Velir Kings	9400-9300 BCE
5.	Irunkovel Lineage of Velirs	9300-3200 BCE
6.	18 lineages of Velirs came into existence	3200 BCE
	....	
7.	Athiamna Neduman Anchi (Satyaputra lineage)	1700 BCE?
8.	Athiyaman II	1400-1300 BCE
9.	Sadayappa Vellal	1400-1300 BCE
10.	Vel Pāri	1200 BCE
11.	Malaiyaman Thirumudi Kari	1175 BCE

The Origin of Mahiṣakas, Kurumbas, Kuntalas and Karnatas

According to legends, Mahiṣāsura, son of Asura King Rambha became the king of the region of Mysore. He defeated Devas. Devi Mahālakśmi or Durgā killed Mahiṣāsura. Thus, the capital of Mahiṣāsura came to be known as Mahiṣūru. Many Yādava families had migrated to Karnataka region after submergence of Dvāravatī and became the rulers of Mahiṣūru. The Mahābhārata refers to the rulers of Mahiṣūru as Mahiṣakas.

Tamil legends indicate that Kurumban was a contemporary of King Tondaiman (11250-11150 BCE). He was the progenitor of Kurumba tribe of Nilgiri Hills. Jaiminīya Aśvamedha mentions that Prince Chandrahāsa was a son of a Kerala king who became the king of Kuntalapuri. Thus,

King Chandrahāsa, a descendant of Chera dynasty was the earliest known king of Kuntala or northern Karnataka. Traditionally, Karnāta has been a name of the South Indian province. The rulers of Karnāta province were referred to as Karnatas. The Mahābhārata refers to Karnatas.

The Chronology of Alvars or Azhvars

According to traditional chronology given by Manavala Mamunigal (1370-1444 CE), Alvars, the earliest Vaishnava poet-saints of Tamil Nadu, flourished in the Dvāpara Yuga, and in the beginning of Kaliyuga. Four thousand Tamil poems composed by twelve Alvars have been compiled by Nathamuni in a treatise known as "*Divya Prabandham*".

Bhaktivaibhava-Prakāśikā of Venkatesha gives the traditional dates of Alvars. Historians rejected these dates as unbelievable but there is not an iota of reason to reject the traditional dates of Alvars. Bhāgavata Purāṇa also supports the traditional dates of Alvars given in Tamil sources. Bhāgavata Purāṇa relates: "In the beginning of Kaliyuga, persons devoted to Vishnu or Nārāyaṇa will be born here where flow the rivers, Tāmraparṇi, Kritamālā (Vaigai), Payasvinī (Pālār), Kāverī and Mahānadī (Periyār)."[57] Brahmavaivarta and Nāradīya Purāṇas indicate that some of the Alvars born in the Krita Yuga and the Tretā Yuga.

South India followed the epoch of Kaliyuga from 3173 BCE before the introduction of Sūrya Siddhānta in the 1st century BCE. Therefore, I have considered the Kali epoch of 3173 BCE instead of 3101 BCE. The earliest four Alvars lived in the Dvāpara Yuga.

			In CE
1.	**Poigai Alvar**	He was born in Kānchipuram and lived around the year 862901 (860900?) of Dvāpara Yuga, i.e. 1099 years before the epoch of Kaliyuga.	4272 BCE
2.	**Bhuthalvar**	He was born in Mahābalipuram and lived around the year 862901 (860900?) of Dvāpara Yuga, i.e. 1099 years before the epoch of Kaliyuga.	4272 BCE

3.	**Peyalvar (Mahat)**	He was born in Mayūrapuri (Mylapore) and lived around the year 862901 (860900?) of Dvāpara Yuga, i.e. 1099 years before the epoch of Kaliyuga.	4272 BCE
4.	**Thirumalisai Alvar**	He was born in Thirumazhisai and lived around the year 862901 (860900?) of Dvapara Yuga, i.e. 1099 years before the epoch of Kaliyuga.	4272 BCE

Sri Nammalvar was the greatest Alvar of Kaliyuga. He was born on the 42nd day of the first year of Kaliyuga. Nammalvar and his disciple Madhurakavi were born on the banks of Tāmraparṇi.

5.	**Nammalvar (Śaṭhakopa)**	He was born on the 42nd day of the first year of Kaliyuga.	3173 BCE
6.	**Madhurakavi Alwar**	He was born a few years earlier than Nammalvar (Dvapara 863879?).	3177 BCE or 3223 BCE
7.	**Kulaśekhara Alvar**	He was a Chera King and born in Kolipattanam of Kerala in Kaliyuga 27 (the 27th year from the Mahābhārata war).	3133 BCE
8.	**Periyalvar (Vishnuchitta and Bhattanatha)**	He was born in Kali 47. He refers to Pāndya King Ko-Nedumaran.	3126 BCE
9.	**Andāl**	She was an adopted daughter of Periyalvar and born in Kaliyuga 98.	3075 BCE
10.	**Tondaradippodi Alvar (Bhaktā-nghrirenu)**	Kaliyuga 107 or 298	3066 BCE or 2875 BCE
11.	**Tiruppānālvar**	Kaliyuga 162 or 343	3011 BCE or 2830 BCE
12.	**Tirumangai Alvar (Kāliya and Parakāla)**	Kaliyuga 217 or 399	2956 BCE or 2774 BCE

The Chronology of Nayanmars or Nayanars

Periyapurāṇam gives the historical account of sixty-three Tamil Śaiva saints known as Nayanmars or Nayanars. Sekkizhar was the author of Periyapurāṇam. Historians speculated that Sekkizhar was a contemporary of Kulottunga Chola II but there is no direct evidence to support it. Undoubtedly, Sekkizhar was a contemporary of a Chola king named Anapāya Chola. Chola Pūrva Patayam records that twenty-five Chola kings reigned from Vira Chola (650-610 BCE) to Uttama Chola (410-433 CE).

Seemingly, Sekkizhar wrote Periyapurāṇam based on the hagiographies of Śaiva saints composed by Sundarar and Nambi Andar Nambi. According to Tamil sources, Nambi Andar Nambi composed Thirumuraikanda Purāṇam during the reign of Chola King Śivapāda Śekhara Abhayakulaśekhara Mahārāja. Historians mixed up the genealogies of the Chandra Vaṁśi Cholas and the Surya Vaṁśi Cholas and mistakenly identified Abhayakulaśekhara with Rājarāja.

Most probably, the descendants of Vira Chola (650-610 CE) were the kings of the region of Chidambaram. Gandarāditya Chola was the King of Chidambaram in the 4th century CE. Sembian Madheviyar was his wife. Uttama Chola was the son of Gandarāditya Chola. Sundara Chola was the son of Ariñjaya, brother of Gandarāditya. Thirumuraikanda Chola or Abhayakulaśekhara Chola was the grandson of Sembian Mādheviyar. According to Chola Pūrva Patāyam, Uttama Chola died in Kaliyuga 3535 (433 CE). Thus, we can roughly fix the lifetime of Thirumuraikanda Chola or Abhayakulaśekhara Chola, Nambi Andar Nambi and Sekkizhar in the 5th century CE.

Periyapurāṇam relates anecdotes related to sixty-three Nayanars but it does not give the chronological order of Nayanars. In all probability, the tradition of Nayanars began at the end of the first Sangam period, around 7000 BCE, and the following nineteen Nayanārs lived before the Mahābhārata era.

		In CE
1.	Tiru Neelakanta Nayanar	7000-3000 BCE
2.	Iyarpahai Nayanar	
3.	Ilayankudi Mara Nayanar	
4.	Maiporul Nayanar	
5.	Viralminda Nayanar	
6.	Amaraneedi Nayanar	
7.	Eripatha Nayanar	
8.	Enadinatha Nayanar	
9.	Kannappa Nayanar	
10.	Kungiliya Kalaya Nayanar	
11.	Manakanchara Nayanar	
12.	Arivattaya Nayanar	
13.	Anaya Nayanar	
14.	Murthi Nayanar	
15.	Muruga Nayanar	
16.	Rudra Pasupathi Nayanar	
17.	Tiru Nalai Povar Nayanar	
18.	Tiru Kurippu Thonda Nayanar	
19.	Chandesvara Nayanar	

Appar or Tirunavukkarasar (20th) was a contemporary of Thirujñana Sambandar (27th). Sambandar was a contemporary of Ninraseer Nedumaran (48th). Ninraseer Nedumaran was a Pāndya King also known as Koon Pāndyan. He succeeded Ukkiraperu Valudi (1276 BCE), the last Pāndya king of the third Sangam period. He became Buddhist but Sambandharar persuaded him to become Śaiva. King Ninraseer Nedumaran or Koon Pāndyan became Śaiva and came to be known as Sundara Pāndya. Thus, we can roughly date Appar, Sambandar and Ninraseer Nedumaran around 1300-1200 BCE.

20.	Appar or Tiru-Navukkarasar Nayanar	1300-1200 BCE
21.	Kulacchirai Nayanar (He was a minister of King Guna Pāndyan. Nakkirar II was his junior contemporary)	1200-1100 BCE

22.	Perumizhalai Kurumba Nayanar	
23.	Karaikal Ammaiyar	
24.	Appuddi Nayanar	
25.	Tiruneelanakka Nayanar	
26.	Nami Nandi Adigal	
27.	Tiru Jnana Sambandar	1300-1200 BCE
28.	Eyarkon Kalikama Nayanar	
29.	Tiru Mula Nayanar (He authored Thirumandiram at the age of 35 [7 Yugas]. He was also one of 18 Siddhars)	1200 BCE?
30.	Dandi Adigal Nayanar	
31.	Murkha Nayanar	
32.	Somasira Nayanar	
33.	Sakkiya Nayanar	
34.	Sirappuli Nayanar	
35.	Siruthonda Nayanar	
36.	Cheraman Perumal Nayanar	
37.	Gananatha Nayanar	
38.	Kootruva Nayanar	
39.	Pugal Chola Nayanar	
40.	Narasinga Muniyaraiyar	
41.	Adipattha Nayanar	
42.	Kalikamba Nayanar	
43.	Kalia Nayanar	
44.	Satti Nayanar	
45.	Aiyadigal Kadavarkon Nayanar	
46.	Kanampulla Nayanar	
47.	Kari Nayanar	
48.	Ninraseer Nedumaran Nayanar or Koon Pāndyan or Sundara Pāndya	1300-1200 BCE
49.	Mangayarkarasiyar (Wife of Ninraseer Nedumaran)	1300-1200 BCE

50.	Vayilar Nayanar	
51.	Munaiyaduvar Nayanar	
52.	Kazharsinga Nayanar (A Pallava King)	
53.	Seruthunai Nayanar (contemporary of Pallava King Kazharsimha)	1150 BCE?
54.	Idangazhi Nayanar	
55.	Pugazh Tunai Nayanar	
56.	Kotpuli Nayanar	1200-1100 BCE
57.	Pusalar Nayanar (A contemporary of Tondaiman or Pallava Kadavarkon and King Vikrama Choda)	1100 BCE?
58.	Nesa Nayanar	
59.	Kochenganan Chola Nayanar (A Chola King)	1060-1030 BCE
60.	Tiru Neelakanta Yazhpanar (a companion of Sambandar)	1300-1200 BCE
61.	Sadaya Nayanar (Father of Sundarar)	1200-1100 BCE
62.	Isaijnaniyar (Mother of Sundarar)	1200-1100 BCE
63.	Sundarar	1150-1050 BCE

Sundarar was a junior contemporary of Kotpuli Nayanar. Seemingly, all Nayanars flourished before the invasion of Khāravela and Kalabhras around 1020 BCE.

Manickavasagar is considered to be the sixty-fourth Nayanar. He was the author of Tiruvasagam and Tirukkovaiyar. He referred to a great King Varaguna Pāndyan but it is difficult to establish the identity of Varaguna Pāndyan because there were many Pāndya kings had the name of Varaguna. Most probably, Manickavasagar was a junior contemporary of Appar and Sambandar.

Ṣoḍaśa-Rājikā: Sixteen Celebrated Kings of Ancient India (From 14050 BCE to 5577 BCE)

The Mahābhārata gives a list of sixteen celebrated kings of ancient India.[58] Chronologically, King Marutta Āvīkśita was the earliest and King Rāma Dāśarathi was the last in this list.

		In CE
1.	**King Prithu Vainya** (Vena and his son Prithu belonged to the lineage of Dhruva, grandson of Manu I.)	14050 BCE
2.	**King Marutta Āvīkśita** (He was the son of Avīkśita. He reigned over a vast kingdom located on eastern side of Sarasvati River. Viśvedevas were in his court. Viśvedevas were the devatā of many Rigvedic hymns.)	13550 BCE
3.	**King Śivi Auśīnara** (He was the son of Uśīnara and Driṣdvatī. The River Driṣdvatī was named after the mother of Śivi. He reigned over a vast kingdom located on western side of Sarasvati River. His sons founded Sauvīra, Kekaya and Madra janapadas.)	13550 BCE
4.	**King Gaya Amūrtarāyasa** (He was the grandson of Kuśa and the son of Amūrtarāyasa. He was a cousin brother of Gādhi, father of Viśvāmitra I. He founded the city of Gaya.)	13500 BCE
5.	**King Bharata Dauṣyanti** (He was the son of Duṣyanta and Śakuntalā.)	13450 BCE
6.	**King Suhotra Atithina** (He was the son of Atithi. His grandson Ajamīḍha II was the progenitor of Kānyakubja Kings, Pāñchālas and Kurus.)	11650 BCE
7.	**King Brihadratha Aṅga** (He belonged to the lineage of King Aṅga.)	11230 BCE
8.	**King Ambarīṣa Nābhāgi** (He was the son of Nābhāga and the grandson of Vaivasvata Manu.)	11200 BCE
9.	**King Yayāti Nāhuṣa** (Son of Nahuṣa and grandson of Ayu.)	11180 BCE
10.	**King Śaśabindu Chaitraratha** (He was the son of Chitraratha. King Māndhātā married a daughter of Śaśabindu.)	11180 BCE
11.	**King Māndhātri Yauvanāśva** (He was the son of Ikśvāku king Yuvanāśva.)	11150 BCE

12.	**King Sagara Aikśvāku**	11000 BCE
13.	**King Bhagīratha** (He was the grandson of Sagara.)	10900 BCE
14.	**King Rantideva Sānkriti** (He belonged to the lineage of King Atināra.)	10850 BCE
15.	**King Dilīpa Ailavila Khaṭvāṅga** (He was the father of King Raghu.)	5800-5770 BCE
16.	**King Rāma Dāśarathi** (The greatest king of post Rigvedic period.)	5635-5590 BCE

The Chronology of the Rishis of Later Vedic Period mentioned in the Post-Vedic Literature:

1.	**Indrota Daivāpa Śaunaka**	He was a contemporary of Janamejaya Pārīkśita (11270 BCE). He anointed him and performed Aindra Mahābhiṣeka.	11270 BCE
2.	**Tura Kāvaśeya**	He was a Purohita of King Janamejaya Pārīkśita.	11270 BCE
3.	**Śaunaka Kāpeya**	A contemporary of Abhipratārin Kākśaseni.	11200 BCE
4.	**Abhipratārin Kākśaseni**	Seemingly, he was the son of Kakśasena. Pañchaviṁśa Brāhmaṇa (10.5.7) and Jaiminīya Brāhmaṇa (3.156) refer to him. According to Śatapatha Brāhmaṇa, Kakśasena was the son of Janamejaya (11270 BCE).	11200 BCE
5.	**Parvata and Nārada**	Aitareya Brāhmaṇa indicates that Rishi Parvata and Rishi Nārada were contemporaries of King Yudhāśrauṣṭi, son of Agrasena, King Sahadeva, son of Sriñjaya, King Somaka, son of	11200 BCE

		Sahadeva, King Babhru, son of Devavridha II, King Bhima of Vidarbha and King Nagnajit, son of Gāndhāra I. According to Adbhuta Rāmāyaṇa, Parvata and Nārada were the contemporaries of King Ambarīṣa. Ambarīṣa was the son of Nābhāga and the grandson of Vaivasvata Manu.	
6.	**Chaikitaneya Brahmadatta**	Kuru King Abhipratārin, son of Kakśasena was the patron of him.	11200 BCE
7.	**Babhru Daivavridha**	A pupil of Rishi Parvata and Nārada.	11180 BCE
8.	**Bhima Vaidarbha**	He is mentioned in Aitareya Brāhmaṇa as having received instruction regarding the substitute for the Soma juice through a succession of teachers from Parvata and Nārada.	11180 BCE
9.	**Uddālaka I**	He was a pupil of Rishi Ayodha Dhaumya. Upamanyu and Veda were his classmates.	11160 BCE
10.	**Upamanyu**	A contemporary of Uddālaka I.	11160 BCE
11.	**Veda**	He was a contemporary of Uddālaka I and the teacher of Uttaṅka.	11160 BCE
12.	**Yājñavalkya I**	He was a pupil of Uddālaka I and son of Devarāta.	11140 BCE
13.	**Gautama Haridrumata**	He was the teacher of Satyakāma Jābāla.	11140 BCE

14.	**Kusuruvinda Auddālaki**	There were two Uddālakas. Uddālaka I was a pupil of Rishi Dhaumya (11150 BCE), a brother of Rishi Devala. Seemingly, Kusuruvinda Auddālaki was the son of Uddālaka I. Uddālaka Āruṇi (10920 BCE) was the second Uddālaka.	11130 BCE
15.	**Satyakāma Jābāla**	He was a pupil of Gautama Haridrumata and Uddālaka I (11100 BCE). King Videha refers to Satyakāma Jābāla (Brihadāraṇyaka, 4.1.6).	11100 BCE
16.	**Revottara Sthapati Pātava Chākra**	He was a royal official of Sriñjaya Pāñchāla King Dushtharitu Pauṁsāyana. He had diplomatically opposed Kauravya king Bāhlika, son of King Pratīpa (11220 BCE).	11200 BCE
17.	**Gośruti Vaiyāghrapadya**	A disciple of Satyakāma Jābāla.	11080 BCE
18.	**Upakosala Kāmalāyana**	A pupil of Satyakāma Jābāla.	11080 BCE
19.	**Śauva Udgītha**	A contemporary of Vaka Dālbhya.	11150 BCE
20.	**Vaka Dālbhya or Glāva Maitreya**	He was a contemporary of Śatānīka Sātrajita and Dhritarāṣṭra Vaichitravīrya.	11150 BCE
21.	**Devabhāga Śrautarṣa**	He was a Purohita of Sriñjayas and Kurus. Girija Bābhravya was his pupil.	11150 BCE
22.	**Kapila**	He was a contemporary of Ikśvāku King Sagara (11000 BCE).	11000 BCE
23.	**Āsuri**	A pupil of Maharshi Kapila.	10950 BCE

24.	**Patanchala Kāpya**	He was the teacher of Uddālaka Āruṇi.	10950 BCE
25.	**Aruṇa Aupaveśi Gautama**	Aruṇa was the son of Upaveśa and a contemporary of King Aśvapati Kaikeya. His son Uddālaka Āruṇi was a contemporary of King Janaka (10920-10870 BCE).	10950 BCE
26.	**Priyavrata Saumapi**	Aitareya Brāhmaṇa (7.24) refers to him. He was a senior contemporary of Uddālaka Āruṇi.	10950 BCE
27.	**Pañchaśikha**	A pupil of Āsuri.	10930 BCE
28.	**Aśvala**	He was the Hotā (Purohita) of King Videha and Janaka. He was the progenitor of Āśvalāyanas.	10930 BCE
29.	**Aśvapati Kaikeya**	He was the king of Kekaya and a senior contemporary of King Janaka. He was the only scholar having the knowledge of Vaiśvānara. Six great Rishis namely Prāchīnaśāla, Satyayajña, Indradyumna, Jana, Budila and Uddālaka Āruṇi approached him to learn about Vaiśvānara. Savitri was his daughter.	10930 BCE
30.	**Atyamha Āruṇi**	Taittirīya Brāhmaṇa (3.10.9.3) refers to Atyamha Āruṇi. He was the son of Aruṇa Aupaveśi and a contemporary of Plakśa Dayyampāti.	10920 BCE

31.	**Uddālaka Āruṇi**	He was a contemporary of Videha King Janaka. His father-teacher was Aruṇa Aupaveśi. Patanchala Kāpya was also his teacher.	10920 BCE
32.	**Bārku Vārṣṇa**	He was a contemporary of King Videha.	10920 BCE
33.	**Prachinashāla Aupamanyava**	A contemporary of Uddālaka Āruṇi.	10910 BCE
34.	**Satyayajña Paulūśi**	A contemporary of Uddālaka Āruṇi.	10910 BCE
35.	**Indradyumna Bhāllaveya**	A contemporary of Uddālaka Āruṇi.	10910 BCE
36.	**Jana Śārkarākśya**	A contemporary of Uddālaka Āruṇi.	10910 BCE
37.	**Budila Aśvatarāśvi**	A contemporary of Uddālaka Āruṇi.	10910 BCE
38.	**Mahiśāla Jābāla**	He went to King Aśvapati along with Uddālaka Āruṇi.	10910 BCE
39.	**Yājñavalkya III**	He debated with many scholars like Uddālaka Āruṇi, Gārgī Vāchaknavī etc., in the court of King Janaka.	10920 BCE
40.	**Gauśla**	A contemporary of Budila Aśvatarāśvi.	10900 BCE
41.	**Gārgya Bālāki**	Kāshi King Ajātaśatru, a contemporary of Videha King Janaka (10920-10870 BCE) was the patron of Bālāki. He lived among the Uśīnaras, Sātvat-Matsyas, Kuru-Pāñchālas and Kāshi-Videhas.	10900 BCE

42.	**Ajātaśatru**	He was the king of Kāshi and a contemporary of King Janaka.	10900 BCE
43.	**Udanka Śaulbāyana**	He was also a contemporary of King Janaka.	10900 BCE
44.	**Prāchīnayogya Śaucheya**	Uddālaka Āruṇi defeated him in a debate.	10900 BCE
45.	**Svaidāyana Śaunaka**	Uddālaka Āruṇi defeated him in a debate.	10900 BCE
46.	**Dividāsa Bhaimaseni**	He was a contemporary of Uddālaka Āruṇi.	10900 BCE
47.	**Vasiṣṭha Chaikitāyana**	He was a contemporary of Uddālaka Āruṇi.	10900 BCE
48.	**Chitra Gāngyāyani**	He was a contemporary of Uddālaka Āruṇi.	10900 BCE
49.	**Uṣasti Chākrāyaṇa**	He was a contemporary of King Janaka. He lived as a Bhikśu in a village of Kurus named Ibhyagrāma. A severe rain of hailstones had destroyed the region of Kurus, resulting in a famine during his lifetime.	10900 BCE
50.	**Kahodaka**	He married Sujātā, daughter of Uddālaka Āruṇi. Rishi Aṣṭāvakra was his son.	10900 BCE
51.	**Gārgī Vāchaknavī**	She debated with Yājñavalkya in the court of King Janaka. She was a daughter of Vachaknu.	10900 BCE
52.	**Jitvan Śailini**	A contemporary of King Janaka.	10900 BCE
53.	**Barku Vārṣaṇa**	A contemporary of King Janaka.	10900 BCE

54.	**Vidagdha Śākalya**	A contemporary of King Janaka.	10900 BCE
55.	**Jala Jātūkarṇya**	A Purohita of three kingdoms, Kāshi, Videha and Kosala.	10900 BCE
56.	**Jaratkārava Artabhāga**	A contemporary of King Janaka.	10900 BCE
57.	**Maitreyī**	First wife of Yājñavalkya III.	10910 BCE
58.	**Kātyāyanī**	Second wife of Yājñavalkya III.	10910 BCE
59.	**Śvetaketu Auddālaki Āruṇeya**	He was the son of Uddālaka Āruṇi.	10890 BCE
60.	**Pravāhaṇa Jaivali**	He was the king of Pāñchāla and a contemporary of King Janaka and Śvetaketu Auddālaki.	10890 BCE
61.	**Proti Kausuruvindi of Kauśāmbi**	He was a pupil of Uddālaka Āruṇi.	10890 BCE
62.	**Kauṣītakī**	He was a pupil of Uddālaka Āruṇi.	10890 BCE
63.	**Bhadrasena Ajātaśatrava**	He was a son of Kāshi King Ajātaśatru. Uddālaka Āruṇi defeated him in a debate.	10890 BCE
64.	**Madhuka Paingya**	He was a pupil of Uddālaka Āruṇi.	10890 BCE
65.	**Chūla Bhāgavitti**	He was a pupil of Uddālaka Āruṇi.	10890 BCE
66.	**Jānaki Ayasthuna**	He was a pupil of Uddālaka Āruṇi.	10890 BCE
67.	**Gardabhi Vipita**	He was a contemporary of King Janaka. He belonged to Bhāradwāja gotra.	10890 BCE

68.	**Bhujyu Lāhyāyani**	A contemporary of Uddālaka Āruṇi and a pupil of Patanchala Kāpya. He debated with Yājñavalkya.	10890 BCE
69.	**Chākitāyana Dālbhya**	A contemporary of Pāñchāla King Pravāhaṇa Jaivali.	10890 BCE
70.	**Somasuhma Sātyayajñi**	A contemporary of Śvetaketu Auddālaki and son of Satyayajña.	10890 BCE
71.	**Śilaka Śālāvatya**	A contemporary of Pāñchāla King Pravāhaṇa Jaivali.	10880 BCE
72.	**Śāṅkhāyana**	He was a pupil of Kahola. Kahola was a pupil of Kauṣītaki and Kauṣītaki was a pupil of Uddālaka Āruṇi.	10850 BCE
73.	**Babara Prāvāhaṇi**	Taittirīya Saṁhitā (7.1.10.2) refers to him. Most probably, Babara was the son of Pāñchāla King Pravāhaṇa Jaivali.	10850 BCE
74.	**Jāta Śākāyana**	A contemporary of Ikśvāku King Brihadratha. He is mentioned in Kāthaka Saṁhitā (22.7).	10850 BCE
75.	**Pippalāda**	Prince Hiraṇyanābha Kauśalya (10900 BCE) was a contemporary of Rishi Pippalāda. Pippalāda's pupil Āśvalāyana Kauśalya was the grandson of Rishi Aśvala, a priest of King Videha and his son Janaka (10920-10870 BCE).	10900 BCE
76.	**Sukeśa Bhāradwāja**	A pupil of Rishi Pippalāda.	10850 BCE
77.	**Satyakāma Śaivya**	A pupil of Rishi Pippalāda.	10850 BCE
78.	**Gārgya Sauryāyaṇi**	A pupil of Rishi Pippalāda.	10850 BCE

79.	**Āśvalāyana Kauśalya**	A pupil of Rishi Pippalāda.	10850 BCE
80.	**Bhārgava Vaidarbhi**	A pupil of Rishi Pippalāda.	10850 BCE
81.	**Kabandhi Kātyāyana**	A pupil of Rishi Pippalāda.	10850 BCE

Though the chronological information of the following rishis is not available, most probably, they had flourished around 11200-10800 BCE.

82.	**Atidhanva Śaunaka**	The teacher of Udara Śāṇḍilya.
83.	**Taponitya Pauruśiṣti**	He is mentioned in Taittirīya Upaniṣad.
84.	**Tuminjña Aupoditi**	He is mentioned in Taittirīya Saṁhitā (1.7.2.1).
85.	**Tura Śravas**	He is mentioned in Pañchaviṁśa Brāhmaṇa (9.4.10).
86.	**Dirgha Śravas**	He was expelled by a king. He starved himself till he could invent a Sāma.
87.	**Driḍhachyut Agasti**	He was a Udgātā at the Satra Yajña of Vibhindukīyas.
88.	**Prati Bodhi Putra**	Aitareya Brāhmaṇa (3.1.5) refers to him.
89.	**Nāka Maudgalya**	Śatapatha Brāhmaṇa (12.5.2.1) refers to him.
90.	**Priyavrata Rauhiṇyāyana**	Śatapatha Brāhmaṇa (10.3.5.14) refers to him.
91.	**Babhru Kaumbhya**	Pañchaviṁśa Brāhmaṇa (15.3.13) refers to him.
92.	**Basta Rāmakāyana**	Maitrāyaṇī Saṁhitā (4.2.10) mentions him.
93.	**Bādhva**	Aitareya Brāhmaṇa (3.2.3) refers to him

94.	**Mākśavya**	Aitareya Āraṇyaka (3.1) mentions him.
95.	**Mahachamasa**	Taittirīya Āraṇyaka (1.5.1) mentions him.
96.	**Māhitthi**	Śatapatha Brāhmaṇa (6.2.2.10) mentions him.
97.	**Raikva**	He was a contemporary of King Janaśruti Pautrāyaṇa.
98.	**Vātavata**	Pañchaviṁśa Brāhmaṇa (25.3.6) refers to him and states that the Dārteyas (Driti) were more prosperous than the Vātavatas.
99.	**Saṁśravas Sauvarchanasa**	Taittirīya Saṁhitā (1.7.2.1) mentions him.
100.	**Chaitryāyana Yajñasena**	Taittirīya Saṁhita (5.3.8.1) mentions him.
101.	**Satyavachas Rāthitara**	Taittirīya Upaniṣad (1.9.1)
102.	**Galunasa Ārkśakāyana**	He was a teacher mentioned in Jaiminīya Upaniṣad Brāhmaṇa (1.38.4).

10

The Chronological History of Indic Languages and Scripts

Western historians have come up with a concocted theory of an Aryan invasion, and propagated that the archaeological sites found in the region of Sapta-Sindhu (from Sarasvati River to Sindhu River) belong to the so-called Indus Valley Civilization. Many scholars have presented numerous irrefutable evidences to prove the fallacy of the Aryan Invasion Theory. Recent genome studies and the DNA analysis of Rakhigarhi remains have also debunked this baseless theory. In reality, the so-called Indus Valley Civilization was not an alien civilization but it was indeed the Post-Vedic civilization. Therefore, the so-called Indus Valley Civilization must be named Post-Vedic Civilization. The seals found in these archaeological sites must be named as Post-Vedic seals. The enigmatic script of Indus seals has posed a great challenge to Indologists since the discovery of the first Indus seal in 1875. In my opinion, it is pertinent to understand the chronological evolution of Indian languages and scripts before debating on the probable language and script of the Indus seals.

Chronologically, the early Vedic civilization began around 14500 BCE, during the time of Brahma and his son Svāyambhuva Manu, when the summer solstice was in Dhaniṣṭhā Nakśatra. Seemingly, Proto-Sanskrit was the popular language of the early Vedic society. Early Vedic rishis of the period 14500-14000 BCE had envisaged the development of a structured language to facilitate the writing of sacred hymns for Vedic rituals. Probably, a proto script (a corpus of symbols) had already been developed by ancient Indians around 14500 BCE. Gradually, Rigvedic rishis evolved the basic rules of context-free grammar, including conjunctions (Sandhis)

and the rules of Cḥandas (meters). Thus, Vedic Sanskrit was an artificially structured language, like computer programming languages, and it evolved out of the Proto-Sanskrit language. Undoubtedly, a basic phonetic script (Proto Brahmi) had also been developed concurrently because the concept of conjunctions cannot be evolved without a phonetic script.

Early Vedic rishis of the period 14000-10500 BCE wrote mantras and sūktas in Vedic Sanskrit. During the period 11500-10500 BCE, Vedic Sanskrit, also known as Cḥāndasa Sanskrit, was evolved to an advanced stage. Rishi Gālava, a classmate of King Brahmadatta II (11130 BCE), was the first who introduced Padapātha and Kramapātha of Vedic hymns and formally founded the science of Vedic grammar. A basic science of Cḥandaśāstra had also been developed at the same time. Seemingly, all hymns of Vedas have undergone editing – with an objective to correct the language grammatically – around 11500-10500 BCE. Thus, Vedic Sanskrit attained a status of a sacred language for rituals. It was insisted that all pupils must learn Vedas by listening to their teachers to avoid mispronunciation of Vedic mantras. This was the reason why Vedas were referred to as "Śruti". Colonial historians have speculated the absence of a script during Vedic period because of their gross ignorance of the evolution of Vedic Sanskrit.

Historians propounded a false theory that the Vedic people did not have the knowledge of writing because the Vedas are known as "Śruti", meaning the texts learnt by listening. This theory can easily be rejected by the study of the Vedic Sanskrit language in which the Vedas were written. Vedic Sanskrit follows the rules of Sanskrit grammar substantially. This means the majority of the rules of Sanskrit grammar evolved, and were well established, during the later Rigvedic period. It is grossly incorrect to say that the entire grammar of Sanskrit evolved after Vedic literature came into existence. Some provisions of Sanskrit grammar, like Sandhi (conjunctions) and context-free grammar for instance, were artificially introduced into the Vedic Sanskrit language to ensure the continuity of the musical rhythm of the human voice, and the freedom of using words anywhere in the sentences, because Vedic hymns were written in verses. No language in the world except Sanskrit or other Indian languages derived

from Sanskrit has the provision of Sandhi (conjunctions) and context-free grammar because these are artificial provisions. It is a scientific fact that the perfect rules of conjunctions and context-free grammar cannot naturally evolve.

Vedic rishis had envisaged the need for developing a flawless, infallible and perfect language for performing Vedic rituals and preserving knowledge. During this process, the Vedic rishis evolved a strict grammatical regulatory system based on the processing of phonetic alphabets, due to which Sanskrit emerged as a perfect and sacred language. Sanskrit also became the language of learned people during the Rigvedic period itself due to grammatical restrictions and artificial improvisations. Evidently, the Vedas were written when the purification of Sanskrit by grammar attained an advanced stage. Vedic rishis also developed meters (Cḥandas) for the writing of Vedic hymns in verse, because it is easier to learn and memorise verse than prose. Vedic meters were based on the concept of processing long and short syllables. Incidentally, Vedic rishis also progressed in the knowledge of applied sciences like arithmetic, geometry, astronomy. Vedas were referred to as "Śruti" because these texts were considered as sacred texts. It was strongly believed that the Vedas must be learnt by listening to them from gurus because any error in pronunciation was treated as a serious offence. It is completely baseless to conclude that Vedic people did not know how to write just because the Vedas were learnt by listening. Vedic people definitely had a well-evolved script because:

- The perfect rules of conjunction (Sandhi) as followed by the Vedas cannot evolve without the invention of a script based on phonetic alphabets.
- The provision of context-free grammar is also not possible without the invention of a script.
- The evolution of phonetic alphabets is also not possible without a script.
- The evolution of meters based on long and short syllables is also not possible without a script.

The evolution of the structured and programmed Vedic Sanskrit also clearly indicates that the Vedic society of Sapta-Sindhu region had at least two languages: Proto-Sanskrit (natural language) and Vedic Sanskrit (artificially evolved language). Common people of Vedic era spoke in their natural language, i.e., Proto-Sanskrit whereas the rishis and their pupils used to learn Vedic Sanskrit for the practice of Vedic rituals and the education of Vedic sciences. It seems Proto-Sanskrit had a Proto-Indus script of hieroglyphs whereas Vedic Sanskrit had a Proto-Brahmi script.

The origins of various Indian kingdoms as narrated in Purāṇas and the geographical references of Rigveda clearly indicate that ancient Rigvedic India was extended up to Gāndhāra and Bāhlīka janapadas in the West, Manipur, Tripura and Burma in the East, Uttarakuru in the North and Pāndya kingdom in the South. The princes of Soma Vaṁśa, namely, Pāndya, Chera, Chola and Kola had already established their kingdoms in South India around 11500-11300 BCE. Danḍaka, son of Ikśvāku, founded his kingdom in Tondaimandalam, and Andhras, the sons of Viśvāmitra, settled in the region of Godāvarī and Krishna rivers. Chandrahāsa, a son of the Chera king, founded his kingdom of Kuntala (north Karnataka) around 11150-11100 BCE. The Jaiminīya Aśvamedha relates that Sri Krishna and Arjuna went up to Manipura and Rakkasapura in the north-east. The disappearance of Vedic Sarasvati River in Thar Desert around 11000-10500 BCE, and the weakening of monsoons in Sapta-Sindhu region around 11000-9000 BCE, had severely affected the prosperity and stability of the Vedic civilization. People had no other option but to immigrate to eastern and southern regions. Seemingly, many Vedic families had crossed Indus River and migrated to western and north-western regions. King Videha Mādhava migrated to Mithila kingdom around 10950 BCE.

Though many Vedic families had to migrate from Sapta-Sindhu region, some Vedic villages situated on the banks of the rivers of Sapta-Sindhu region might have survived during the period 11000-9500 BCE. Seemingly, monsoons became normal after 9300-9000 BCE and the Sapta-Sindhu region again started flourishing, which led to the evolution of post-Vedic sciences and literature. During the period 10000-9000 BCE, Vedic or Cḥāndasa Sanskrit was transformed into Post-Vedic Sanskrit.

There was a long break in the continuity of writing mantras and sūktas in Vedic Sanskrit. This was the reason that none of the post-Vedic rishis had attempted to write Vedic Mantras. In modern times, though we may learn and understand the old Hindi language of Tulasi's Ramacharit Manas and Jayasi's Padmāvat, we cannot create new literature in the archaic Hindi language because nobody speaks or understands archaic Hindi today. Similarly, Vedic Sanskrit took a backseat when Post-Vedic Sanskrit had evolved out of it. Thus, Post-Vedic Sanskrit became the medium of education due to the advancement of Sanskrit grammar and Vedic Sanskrit remained limited to Vedic hymns only.

Gradually, Post-Vedic Sanskrit evolved into Laukika Sanskrit, around 8000-7500 BCE, due to further advancement of Sanskrit grammar. During the 28th Tretā Yuga (6777-5577 BCE), Bharata's Nātyaśāstra, Dattilam, Nandikeśvara's Abhinaya Darpaṇa and Bharatārṇava and Mātaṅga Muni's Brihaddeśī brought a revolution in the entertainment for all sections of society. Vālmiki, the Ādikavi, wrote the Rāmāyaṇa around 5625 BCE. Vālmiki Rāmāyaṇa had inspired many scholars to write Driśya (Nātya) and Śrāvya Kāvyas in Laukika Sanskrit. Public performances of the Rāmāyaṇa and Purāṇas became the main source of the entertainment of society. The demand for innovations in performances led to the evolution of various Rāmāyaṇas like Adbhuta Rāmāyaṇa, Ānanda Rāmāyaṇa and more. During the post- Rāmāyaṇa era, the performance of Adbhuta Rasa became immensely popular, which led to mythologisation of historical legends of the Rāmāyaṇa and Purāṇas – for instance, Śukāchārya was depicted as parrot-faced, Gajānana as elephant-faced, Narasimha as lion-faced, Vāmana as a midget, Kapi as monkey, King Mastya as fish, Varāha as boar, Rikśa as bear, Nāga as serpent, Garuḍa as vulture and so on.

Interestingly, the public performances of Sanskrit kāvyas and nāṭakas brought a paradigm shift in the spoken languages of Indian society. The mass migrations of Vedic families from Sapta-Sindhu region to other regions at the end of Rigvedic era led to the evolution of numerous dialects of Proto-Sanskrit in India. Before the 28th Tretā Yuga (before 6777 BCE), the knowledge of Sanskrit language was limited to rishis, āchāryas and their students because Vedic education was imparted strictly in the medium of Sanskrit. It was also expected that the speakers of Sanskrit

must have the knowledge of grammar. Since it had been artificially evolved based on a complicated grammar, Sanskrit could not become a popular language of common people during the Vedic and post-Vedic eras. Most probably, the people of North India spoke the dialects of Proto-Sanskrit and the people of South India spoke Sen Tamil and Kudun Tamil. During the 28th Tretā Yuga (6777-5577 BCE), the public performances of Sanskrit kāvyas like the Rāmāyaṇa and Purāṇas inspired a large section of society to learn Sanskrit. Gradually, a majority of Indian society learnt Sanskrit and started conversing in Sanskrit without the proper knowledge of Sanskrit grammar. Consequently, Prakrit languages were born out of Sanskrit during the 28th Tretā Yuga because common people could not maintain the discipline of Sanskrit grammar. Many dialects of Prakrit language also came into existence like, Śaurasenī, Gāndhārī, Māgadhī (Pāli), Ardhamāgadhī, Kāmarūpī, Mahārāṣṭrī, and more. Sanskrit nātaka texts refer to many other dialects of Prakrit such as Drāmilī, Odrī, Dākśiṇātya, Prāchya, Śabarī, Ābhīrī, Chāndālī, Bāhlīkī, Śakārī, Takkadeśī and Apabhraṁśa.

Hemachandra calls Ardhamāgadhī as Ārṣa Prakrit and others as Deśya Prakrit. It appears that the early Prakrit was very close to Sanskrit, as it was derived out of Sanskrit, but gradually it started to mix up with the dialects of Proto-Sanskrit and evolved into various dialects of Prakrit. The Paiśāchi dialect of Proto-Sanskrit faced extinction under the influence of Prakrit around 3000-2000 BCE. Concerned with the corruption of Prakrit dialects, Vararuchi Kātyāyana of Nanda era (1710-1610 BCE) was the first who wrote a grammar of Prakrit. The Prakrit dialects, which strictly followed the grammar of Vararuchi, were called Ārṣa Prakrit and the Prakrit dialects that did not strictly follow the grammar were called Deśya Prakrit. Gradually, the dialects of Deśya Prakrit evolved into modern North Indian languages.

Seemingly, a dialect of Proto-Sanskrit might have evolved into archaic Tamil in South India. Archaic Tamil might have existed around 11266-7000 BCE. After 7000 BCE, archaic Tamil had been evolved into two dialects, Sen Tamil (spoken to the south of Venkata hill) and Kudun Tamil (spoken to the north of Venkata hill), as indicated in Tolkappiyam,

a treatise on ancient Tamil grammar. Rishi Agastya II wrote the grammar of Tamil language, probably in the beginning of the second Sangam era (6800 BCE). Classical Tamil language of Tamil Nadu generally followed Agastya's grammar and came to be known as Sen Tamil. Classical Tamil language could survive in its original form since 7000 BCE because of Agastya's grammar. Kudun Tamil of Karnataka and Andhra Pradesh could not follow the rules of Agastya's grammar. Gradually, Kudun Tamil might have evolved into the archaic Telugu-Tulu-Kannada language around 6500-6000 BCE, and Telugu, Hale Kannada and Tulu languages were born out of archaic Telugu-Tulu-Kannada after 2000-1000 BCE. Malayalam was the last entrant of South Indian languages and probably evolved out of Tamil, Tulu and Kannada around 1st century BCE or CE. Though various Indian languages have evolved in their respective regions, pan-Indian languages like Sanskrit and Prakrit have highly influenced the evolution of these languages. This is the reason why all Indian languages have many Sanskrit words.

The Chronological Genealogy of Indic Languages

(i) Artificially evolved Indic language (used by learned people)

Pan Indian Language

Proto Sanskrit (16000-11000 BCE)

|

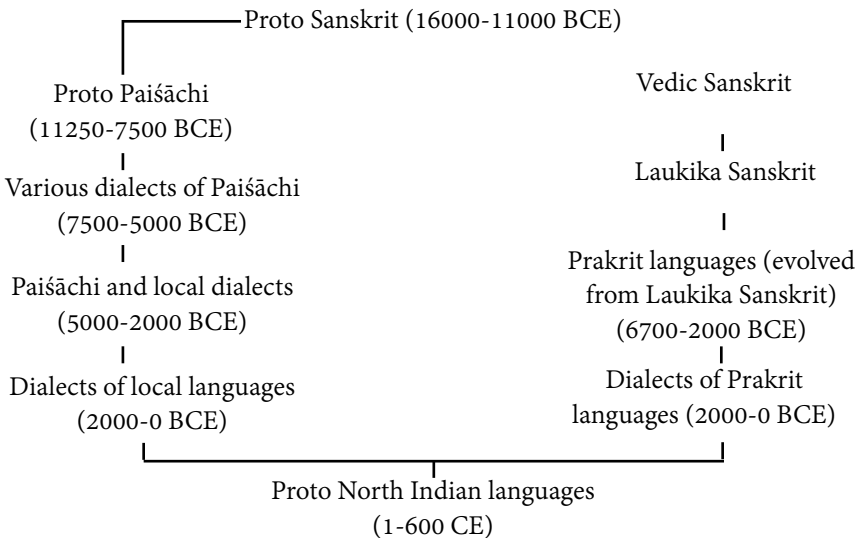
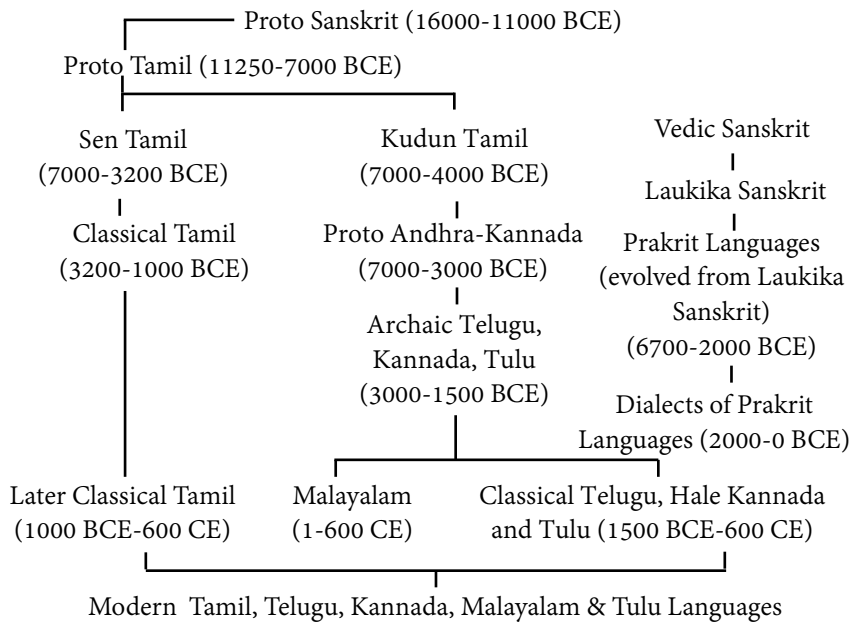
Vedic Sanskrit
(14500-10500 BCE

|

Post-Vedic Sanskrit
(10500-7500 BCE)

|

Laukika Sanskrit
(7500 BCE onwards)

(ii) Naturally evolved Indic languages (spoken by common people)

(a) North Indian Languages

Seemingly, the Proto-Sanskrit of early Vedic era had a Proto Indus script that was based on a corpus of symbols. Brahma and Saptarṣis had envisaged a structured language and script. Brahma was the founder of the business logic of phonetic script. Therefore, the phonetic script of Vedic era came to be known as Brahmi. Since the knowledge of Sanskrit was limited to only learned men up to the Rāmāyaṇa era, the use of archaic Brahmi script was also strictly limited to Sanskrit language only. The majority of Indian society might have used the script of Proto-Sanskrit and its variants up to the Mahābhārata era. Sanskrit came into popular use around 6700-6000 BCE and Prakrit dialects were born around 6500-6000 BCE. At the same time, archaic Brahmi script also became popular and the script of the dialect of Proto-Sanskrit faced extinction around 3000 BCE. Brahmi and Kharoshthi scripts have evolved from Archaic Brahmi script around 2500-2000 BCE. All Indian scripts have evolved from Brahmi script. Old Avestan, Aramaic, Pahlavi, Armenian and Georgian scripts were either born out of the Kharoshthi script or were influenced by it, but these scripts adopted the logic of Greek alphabets under the influence of Greek script around 1800-1200 BCE.

In view of the chronological evolution of Indic languages and scripts as discussed above, the Indus script was probably the script of the dialect of Proto-Sanskrit, which was in vogue in north-western India around 5000-3000 BCE. This script was a logosyllabic script and had approximately 450 symbols. Evidently, the Indus script is not a phonetic script. Therefore, the language in which these seals were written cannot be Sanskrit or Prakrit. Many scholars have claimed the successful decipherment of this script but it is not possible to accept any claim until we find a bilingual inscription. The archaeological sites in Pakistan and India are dated around 8000 BCE to 2000 BCE. These sites were the cities and villages of post-Vedic era and the post-Rāmāyaṇa era. Monsoons had again weakened after 5000 BCE. North-western India had to face a long drought of 900 years around 4500-3600 BCE. Therefore, all Indus seals must be dated before 3000 BCE.

Now the question arises what was the dialect of Proto-Sanskrit that used the so-called Indus script. All Prakrit dialects evolved in the Tretā Yuga (6777-5577 BCE). Moreover, Sanskrit and Prakrit cannot be written

in a logosyllabic script. Most probably, Central Pakistan, Sindh, Punjab, Haryana, Rajasthan and Gujarat regions of ancient India spoke Paiśāchī language, a dialect of Proto-Sanskrit. Paiśāchī or Paiśāchikā dialect of Kekaya and Śūrasena was the likely language of the Indus seals. According to traditional legends, Guṇādhya wrote Brihatkathā in the Paiśāchī language. Though there are many references of Paiśāchī language in Sanskrit and Prakrit literature, unfortunately there is not a single quotation of Brihatkathā written in the Paiśāchī language. Paiśāchī was also called Bhūtabhāṣā, the language of the dead. Evidently, Paiśāchī became extinct before the time of Kātyāyana of the Nanda era (17^{th} century BCE).

As explained above, ancient Indian society was a multilingual society since the Rigvedic era. According to Somadeva's Kathāsaritsāgara, Śiva narrated the story of seven Vidyādharas to Pārvatī. Puṣpadanta happened to have overheard the story. Probably, Mālyavān also heard the story. Puṣpadanta told the story of Vidhyadharas to a Piśācha in the forest of Vindhyas. It may be noted that Piśāchas were not ghosts in Vedic era. They were the sons of Rishi Kaśyapa. According to Nīlamat Purāṇa, Northern Pakistan and Kashmir was originally inhabited by the Nāgas and the Piśāchas. Most probably, Kaṇabhūti narrated the historical stories of Brihatkathā to Guṇāḍhya in the Paiśāchī dialect of Proto-Sanskrit. Guṇāḍhya wrote Brihatkathā around 2200-2100 BCE in the Paiśāchī dialect. Brihatkathā was very popular in central and north-western ancient India. After 2000 BCE, Paiśāchī became almost extinct. Considering the popularity of Brihatkathā, Vararuchi Kātyāyana of the Nanda era (17^{th} century BCE) learnt Paiśāchī and compiled it in Prakrit language.

It seems Vararuchi Kātyāyana learnt Paiśāchī and translated Brihatkathā into Prakrit, titled as "Vaddakathā". Subandhu's Vāsavadattā refers to Guṇāḍhya's Brihatkathā. King Durvinīta of the Ganga dynasty of Karnataka had translated Vaddhakathā into Sanskrit around 150 BCE. Later, Kśemendra wrote Brihatkathāmañjarī, Somadeva wrote Kathāsaritsāgara and Budhaswāmi wrote Brihatkathāślokasaṅgraha based on Guṇāḍhya's Brihatkathā.

In all probability, Gondi language of the Vindhya region of Madhya Pradesh is probably a direct descendant of Paiśāchī language. In my

opinion, the so-called Indus seals were probably written in the Paiśāchī language and its logosyllabic script. The script of logosyllabic became extinct around 3500 BCE but the language might have survived up to the lifetime of Vararuchi Kātyāyana (17th century BCE). It may be noted that though ancient Indian kings had the knowledge of Sanskrit, they preferred to communicate with common people in their own language. The Indian kings of the period 1765-500 BCE generally used Prakrit as the language of communication because it was the language of masses. Evidently, the Indian kings of the pre-Mahābhārata era used Paiśāchī and its script as the official language and script for effective communication with the common people. This is the reason we find Indus seals of the pre-Mahābhārata era written in the so-called Indus script instead of Brahmi or Kharoshthi.

Literary Evidence of Multilingualism in Vedic and Post-Vedic Period

Interestingly, Śātapatha Brāhmaṇa (8800 BCE) tells us that Asuras could not follow the proper grammar of Vedic Sanskrit. Asuras used to mispronounce "हे अरयः" (hostile army or enemies) as "हेलयः" or " हेलवः".[1] According to Śatapatha Brāhmaṇa, proper pronunciation of mantras is extremely important in Vedic rituals and this was the main reason why Asuras got defeated by Devas. Evidently, Asuras followed a dialect of Vedic Sanskrit that evolved into Avestan language. Probably, "हेलयः" became "Haenaya" in Avestan language, which means hostile army. The Kaṇva branch mentions that Asuras mispronounced ""हे अरयः" as "हैलः" (हैलो हैल इत्येतां ह वाचं वदन्तः पराबभूवुः).

According to Bharata's Nātyaśāstra (~6000 BCE), four types of languages can be used in a play: Atibhāṣā (language of Devas), Āryabhāṣā (language of kings and Chaturvarṇa people), Jātibhāṣā (languages of common people and Mlecchas) and Yonyantarī (language of rural and tribal people) [भाषा चतुर्विधा ज्ञेया दशरूपे प्रयोगतः, अतिभाषार्यभाषा च जातिभाषा तथैव च। तथा योन्यन्तरी चौव भाषा नाट्ये प्रकीर्तिता।].[2] Evidently, Atibhāṣā was Sanskrit and Āryabhāṣā was Prakrit. Nātyaśāstra mentions that the Jātibhāṣā (common language of masses) has many dialects (विविधा जातिभाषा च प्रयोगे समुदाहृता) and these dialects contain many words of Mlecchạ language. These dialects of Jātibhāṣā are spoken in Bharata

Varṣa (म्लेच्छशब्दोपचारा च भारतं वर्षमाश्रिता). Yonyantarī dialects were the languages of rural and tribal people (अथ योन्यन्तरी भाषा ग्राम्यारण्यपशूद्भवा).[3]

Interestingly, Nātyaśāstra classifies languages into two categories: Bhāṣā and Deśabhāṣā. Seven Prakrit Languages – Māgadhī, Ardhamāgadhī, Śaurasenī, Avantī, Prāchya, Bāhlīka and Dākśiṇātya – were extant during the time of the compilation of Bharata's Nātyaśāstra (6000 BCE). Nātyaśāstra also refers to many Vibhāṣās or Deśabhāṣās, like Śakārabhāṣā, Chāṇḍālī, Abhīrī, Śāvarī, Śabarī and the languages of Kirātas, Andhras (archaic Telugu), Drāmilas (Tamil) and Khasas. The "एकारबहुला" language (a dialect in which ए was frequently or abundantly used) was spoken in the region of Ganga River, the "नकारबहुला" language in Vindhya region, the "चकारबहुला" language in Saurashtra and Avanti, the "उकारबहुला" language in Himachal, Kashmir, Sindh and Sauvira and the "तकारबहुला" language in the region of Charmaṇvatī (Chambal River) and Arbuda (Mount Abu). The Chapter 17 of Nātyaśāstra also provides the regulations for usage of Sanskrit, Prakrit and common languages in Nātya performances.

Mataṅga Muni refers to Deśa Bhāṣā or common languages of masses in his Brihaddeśī. He refers to sixteen kinds of Bhāṣā Gītis and twelve kinds of Vihāṣā Gītis.[4] Evidently, Vibhāṣā or Deśabhāśā Gītis were written in local languages. Vālmiki Rāmāyaṇa refers to two different types of Sanskrit language: Dvijāti Sanskrit (Laukika Sanskrit of higher class) and Mānuṣī Sanskrit (Prakrit) [वाचम् च उदाहरिष्यामि मानुषीम् इह संस्कृताम्, यदि वाचम् प्रदास्यामि द्विजातिः इव संस्कृताम्].[5] Hanuman decides to speak in the language of Mānuṣas (Prakrit) instead of Sanskrit so that Sītā can be consoled [अवश्यम् एव वक्तव्यम् मानुषम् वाक्यम् अर्थवत्].[6] Hanuman thinks that if he speaks in Sanskrit, Sitā may get frightened thinking Rāvaṇa has come disguised as Kapi. Manusmriti mentions that all those who are excluded from Chaturvarṇa system or who were not born from the mouth, the arms, the thighs and the feet of Brahma were called Dasyus, whether they speak Mlecchạa language or Ārya language.[7]

Ekaśriṅga or Hiraṇyaśriṅga

Seemingly, Ekaśriṅga or the unicorn (a type of horse), was found in ancient India. This rare species of unicorn became completely extinct during the

long drought around 4000 BCE. This animal is depicted in many Indus seals. Rishi Riṣyaśriṅga was also known as Ekaśriṅga as mentioned in the Rāmāyaṇa. Ekaśriṇga Avadāna of Buddhism also relates the legend of Rishi Riṣyaśriṅga. According to ancient Greek sources, the unicorn used to be found only in India. Evidently, the unicorn still existed in India when the descendants of Turvaśa migrated to Anatolia and Greece. This may be the reason why the unicorn finds mention in the legends of ancient Greek. The unicorn is also found in ancient Sumerian sources. Unicorn is the national animal of Scotland.

It appears that Ekaśriṅga, or the unicorn, was used for performing Aśvamedha Yajña in the Rigvedic period. Jaiminīya Aśvamedha indicates that the suitable horse for Aśvamedha was available only with King Yauvanāśva. Bhima, Vriṣadhvaja (son of Karṇa) and Meghavarṇa (son of Ghatotkacha) had to steal the horse from Bhadrāvatī, the capital of King Yauvanāśva (Māndhātā). Evidently, the Yajñāśva for Aśvamedha was a rare species of horse. It is certain that the Yajñāśva for Aśvamedha was carefully selected in the Vedic period. Though there is no explicit reference of Ekaśriṅga Aśva in Vedic literature, Rigveda refers to Hiraṇyaśriṅga Aśva (a horse with a golden horn) and also mentions "*tava śriṅgāni*" (the horns of horses).[8] Interestingly, Aśva (unicorn) is the devata of the 163rd sūkta of the first Mandala. Since the horses have no horns today, Sāyaṇa speculates about Śriṅgas as hair on the head of a horse ("*Śiraso nirgatāḥ Śriṅgasthānīyāḥ keśāḥ*").

Brahmavaivarta Purāṇa forbids the performance of Aśvamedha in Kaliyuga, which indirectly indicates the extinction of suitable horses required for Aśvamedha. It was Puṣyamitra Śuṅga who revived the performance of Aśvamedha around 1450 BCE and he might have used the available horse as Yajñāśva in absence of Ekaśriṅga. Later, Samudragupta (330-279 BCE) also performed Aśvamedha. The Chālukya and Chola kings also performed Aśmavedha. Sh. Mrigendra Vinod ji has identified the cult object depicted on Indus seals having the image of the unicorn as Yupa with Chaṣāla and Svaru. Undoubtedly, the unicorn depicted on Indus seals was a horse. An artefact of the unicorn with a saddle found in the Indus-Sarasvati region clearly indicates a tamed or domestic unicorn.

The Identification of Meluha Region

Sumerian texts refer to three major sea trade centres of copper, namely, Dilmun or Telmun, Meluha and Magan or Makkan. Historians unreasonably identified Indus region as Meluha without any evidence. In reality, Dilmun or Telmun was Oman, Meluha was Yemen and southern Saudi Arabia and Magan or Makkan was Jeddah to Jordan hill range on the coastline of the Red Sea. Most probably, Oman was the real Dilmun or Telmun. It appears that the word Oman was also derived from Dilmun or Telmun. The hill range of Oman, close to Persian Gulf, was the source of copper. Sumerian texts mention that Dilmun was the source of copper. One archaeological site of Oman has been carbon dated around 7615 BCE. Ancient Sumerian sources indicate that Meluha was located towards East and it was the land of Black Mountains. Sarat-al-Asir mountain range of Southern Saudi Arabia and Yemen is indeed the land of Black mountains. The texts related to Assyrian king Ashurbanipal indicate that Meluha was located close to Africa and Egypt. Later Assyrian and Hellenistic sources clearly indicate that Meluha and Magan were the kingdoms adjacent to Egypt. Therefore, Meluha, the land of Black Mountains, and adjacent to Egypt, can only be identified with Yemen. It has nothing to do with Indus region. Magan or Makkan was also a source of copper for Sumer. Most probably, the name of Mecca is derived from Magan or Makkan. The Sarat-al-Hejaj range of hills was probably called as Magan. This place is also adjacent to Egypt.

The Evolution of Avestan, Iranian and European Languages

Colonial linguists and historians have found similarities of Sanskrit, Avestan, Latin and Greek languages, which led to the evolution of hypothetical linguistics of modern times. They have concocted that the hypothetical Proto Indo-European language (PIE) was the mother of Proto Indo-Iranian language, which was the mother of Proto Indo-Aryan and Proto Iranian languages. Thus, Vedic Sanskrit was a child of Proto Indo-Aryan language and Avestan was a child of Proto Iranian language. Similarly, Hellenic Greek and Latin were the children languages of PIE. It is pertinent to understand here that the mother-child relationship of languages can only be established based on the chronology of the evolution of Indian, Iranian and European languages. Therefore, we have to establish the true chronological history of India, Iran and Europe before debating over the subject of the chronological linguistics.

I have scientifically established the sheet anchors of the chronology of world history and explained that the early Vedic period formally commenced from the epochal date of Brahma and his son Svāyambhuva Manu around 14500 BCE. Vedas were written in Vedic Sanskrit around 14000-10500 BCE. It may be noted that Vedic Sanskrit was a grammatically programmed language and evolved from a natural Indian language that can be called "Proto-Sanskrit".

According to ancient Persian legends recorded in *Shahnama*, the history of ancient Iran begins with conflict of Ahuras (Asuras) and Daevas (Devas). Probably, Daeva, or false god or evil spirit, Ahriman posed a great challenge to Ahur Mazda. Gayomart or Keyumars was the first king of Zoroastrians or Iranians. He was also a contemporary of Ahriman. Daeva Indra was also an enemy of Ahuras. In all probability, Ahriman is derived from अहिः मन्यु. Ahi means Vritrāsura and Manyu means enemy. Vedic texts refer to Vritrāsura as Indraśatru. Similarly, Avestans might have referred to Indra as Ahirmanyu = Ahriman. Devas and Asuras of early Vedic period were cousin brothers. They were always in conflict for political supremacy. Purāṇas relate the legend of Tripurāsura and his son Gayāsura. Seemingly, Ahur Mazda was Tripurasura and his son Gayomart was Gayāsura.

Śatapatha Brāhmaṇa and its Kaṇva Branch clearly indicate a different dialect of Vedic Sanskrit spoken by the Asuras. Thus, two languages, Vedic Sanskrit of Devas and Vedic Sanskrit of Asuras, were born out of Proto-Sanskrit. Vedic Sanskrit of Asuras was the mother of Avestan and Iranian languages.

Seemingly, the migrations of Turvaśa's descendants and Asuras to Anatolia and East Europe during the Rigvedic period led to the evolution of Proto-European language. Thus, Proto-Sanskrit was also the grandmother of Proto-European language. The second migration of Yavanas, from Afghanistan to Greece around 6500-5000 BCE, led to the evolution of Hellenic Greek and Latin. Most probably, the Śakas or Scythians of Afghanistan had also migrated to Bulgaria, Romania and East Europe.

Avesta i.e. Asuraveda

Avesta is the oldest text of Zoroastrianism. It is well known that there are significant similarities in the words and grammar of Avestan and Vedic Sanskrit languages. Avesta mentions Mithra, Varuna, Indra, Yama and more. Gathas of Avesta mention Rudra along with Angra Mainyu. One of Yajurveda's mantra ("नमस्ते रुद्र मन्यव") also mentions Rudra and Manyu. Vedic and post-Vedic sources indicate that the Asuras also performed Yajñas. Gopatha Brāhmaṇa refers to Asuraveda of Pratīchyas (westerners) and Asita Dhānvan, an Asura Rishi.[9] Asita is also mentioned in Avesta. Śāṅkhāyana Śrautasūtra mentions about Asuravidyā. Evidently, Asuras compiled their own Veda for performing rituals. The same Asuraveda came to be known as Avesta. Unfortunately, a major portion of Avesta text is now lost.

Seemingly, Asuras, cousin brothers of Devas, compiled their own Veda. Many Vedic rishis taught Vedic sciences to Asuras. Śukrāchārya, a famous Guru of Asuras, was known as Kāvi or Kava Us or Kaikaus in Zoroastrianism. Śukrāchārya was the son of Kavi. He was referred to as Uśanas Kāvya in Rigveda Anukramaṇī. The Asuras evolved Archaic Avestan Sanskrit (Vedic Sanskrit of Asuras) based on their own grammar from Proto-Sanskrit. Thus, Vedic Sanskrit and Archaic Avestan Sanskrit were artificially evolved and limited to only learned people.

The common people of Asura community spoke Proto Iranian that naturally evolved from Proto-Sanskrit. It appears that the early Asuras had settled in Gāndhāra region on the banks of Helmand River. According to Vedic legends, Saramā Devaśunī met Paṇis, a business clan of Asuras on the banks of Rasa River. Most probably, Rasa River was Helmand River of Afghanistan. King Bāhlīka of the Kuru dynasty and King Gāndhara of the Druhyu dynasty conquered northern and southern Afghanistan respectively and established their kingdoms around 11100-11000 BCE. Asuras had no other option to migrate further westwards. They settled in Iran, Iraq, Syria and Southern Anatolia. Paṇi Asuras (known as Phoenicians in the west) migrated up to Atlantic Ocean and a group of Paṇis might have founded the city of Atlantis, which was submerged by sea around 10000 BCE. When the monsoons weakened after 11000 BCE, many groups of Dānavas and Turvaśas had also migrated up to Greece and Druhyus had migrated to Sumeria and Syria. Thus, the speakers of Proto-Sanskrit and Proto-Iranian languages laid foundation for the evolution of all west Asian and European languages. Therefore, Proto-Sanskrit was indeed the mother of Proto Indo-Iranian and Proto Indo-European languages.

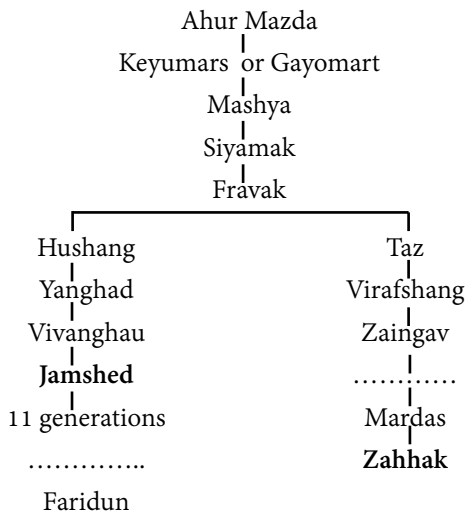
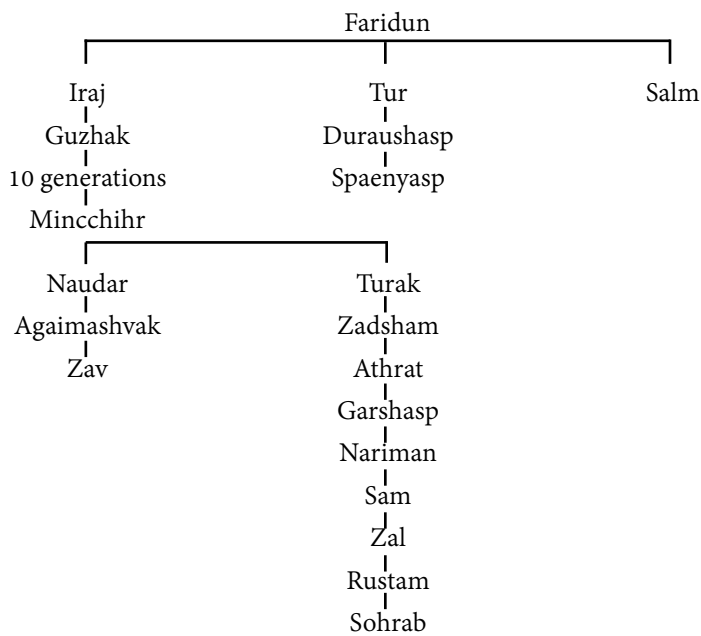
It appears that the early Zoroastrianism of Asuras extended from Iran to Southern Anatolia and posed a challenge to Dānavas and Turvaśas, the early settlers of Greece. Seemingly, there were at least two Zoroasters. The first Zarathushtra, also known as Ashu Zarathushtra or Zarathushtra Spitama, was the author of Gathas and Yasna Haptanghaiti of Avesta. Though Yāyāvara brahmanas of the Rigvedic era had names like Jaratkaru and so on, Yāyāvara brahmanas always followed Vedic tradition. Sanskrit poets Bhavabhūti and Rajaśekhara belonged to the clan of Yāyāvara brahmanas. Ancient Greek sources also refer to two Zoroasters. Hermodorus (10^{th} century BCE) believed that Zoroaster I lived 5000 years before the date of Trojan War (1842 BCE). Eudoxus also placed Zoroaster I 6000 years before the lifetime of Plato (11^{th} century BCE). Evidently, Zarathushtra I flourished around 7000 BCE and authored Gathas and Yasna Haptanghaiti of Avesta and recompiled Avesta. Zarathushtra I was like Veda Vyāsa of Zoroastrianism. He transformed Zoroastrianism into Monotheism and founded the basic tenets of Zoroastrian philosophy.

This is how an Asuraveda transformed into Avesta and Zoroastrianism around 7000 BCE. Interestingly, Zoroastrianism accepted the Indian concept of Mahāyuga of 12000 years that evolved after the Rāmāyaṇa era. Zoroastrianism followed equal length of four Yugas (3000 years of each Yuga) instead of the differential duration (4:3:2:1) of four Yugas.

Dānavas and Turvaśas of the post-Vedic era were the worshippers of Vedic devatas like Mitra, Varuṇa, Indra, Nāsatya and Agni. These Vedic gods had been transformed into Greek gods. The twelve Olympian gods are like twelve Ādityas of the Vedic era. The common people from Afghanistan to East Europe prominently worshipped God Mithra. Gradually, Mitra became synonymous with Sūrya (Sun). Zarathushtra I's monotheism also influenced the philosophy of Mitra god worshippers of East Europe. Thus, Mithraism was born in East Europe and became a popular religion before the birth of Christianity around 600-300 BCE. Mithraism has been meticulously destroyed and wiped out by the Christian faith patronized by authoritarian kings.

Probably, many Indian families of Balochistan and Gāndhāra had also migrated to Sumeria, Babylon, Egypt around 11000 BCE. Purāṇas indicate that the sons of Prachetas, a descendant of the Druhyu Dynasty, migrated west and became kings of Mlecc̣ha countries.[10] Sumerians and Egyptians started learning the basics of Indian astronomy and mathematics in the post-Rāmāyaṇa era. This is the reason why Sumerians and Egyptians also believed that their gods and ancestors reigned for thousands of years. Sumerians and Egyptians also followed the Yuga of 432000 years. The Yavanas of northern Afghanistan and Turkmenistan learnt the Sūrya Siddhānta of Mayāsura (6778 BCE) and evolved Yavana Siddhānta under the influence of Sūrya Siddhānta. Though Turvaśa's descendants had migrated to Greece and Anatolia during the Rigvedic period around 12500-10500 BCE, many families of Yavanas living in Bactria and Gāndhāra had migrated to Greece and western Anatolia around 6500-5000 BCE and came to be known as "Ionians" and "Javans". Consequently, Hellenistic mythology and Hellenistic sciences have been evolved.

Seemingly, Zoroastrianism declined around 3000-1300 BCE due to the political rise of Egypt, Sumeria-Babylonia and Assyria. Persia was under the rule of Sumerians and Babylonians around 3000-1700 BCE. The rising Buddhism also posed a great challenge to Zoroastrianism around 1800-1300 BCE. The later Kayanian dynasty was reigning over Persia around 1700-1300 BCE. Zoroaster II was born in Magha country (North Bactria, North Turkmenistan and Uzbekistan) around 1307 BCE and revived Zoroastrianism. Since Magha was the birthplace of Zoroaster II, Zoroastrianism also came to be known as Maghism. Maghism or Later Zoroastrianism accepted the solar calendar and started celebrating Navroz. Kayanian king Gustaspa declared Zoroastrianism as the state religion. Acheamenids and Sasanians promoted Zoroastrianism. Unfortunately, the Zoroastrians of Iran and Turkmenistan had no other option but to surrender to the barbaric Islamic invaders. The converted Maghist Muslims (Zoroastrian Muslims) came to be known as Mughals who invaded and established their kingdom in India in the Medieval Period. Thus, the glorious Zoroastrianism of Vedic era has been wiped out from Iran. Today, a micro minority community of Zoroastrians in India is struggling to preserve their glorious heritage.

The Genealogy of Pishdad Dynasty of Ancient Persia (as given in Bundashin)

The Chronology of Ancient Persia (As given in Shahnama)

		In CE
Ahur Mazda		14350 BCE
The Pishdadian Kings		
Keyumars I or Gayomart I	3030 years	14300 BCE
Keyumars II or Gayomart II		11300-11220 BCE
Hushang	40 years	11220-11180 BCE
Tahmuras	30 years	11180-11150 BCE
Jamshid Jam (and his descendants)	700 years	11150-11000 BCE to 10400 BCE
Zahhak or Azi Dahaka, a Serpent King or an evil foreign ruler (and his descendants)	1000 years	10400-9400 BCE

Faridun (First physician) and his descendants (The legends of Garshasp, Nariman, Sam, Zal, Rustam & Sohrab)	500 years (*Tabakat-i-Nasiri* indicates the duration of 1276 years between Faridun and Garshasp.)	9400-7900 BCE
The Kayanian Dynasty		
Kay Kubad and his son Kavi Kavata (the founders of Kayanian dynasty)		~8000 BCE?
Kavi Ushan or Kay Kāvus, a king of Ariana and the contemporary of Rustam and Sohrab. He had a flying chariot.		~7900 BCE?
Avesta (Zamyad Yasht 19.71, and Farvardin Yasht 13.132) mentions many Kayanian kings like Kavi Aipivohu, Kavi Usadha, Kavi Arshan, Kavi Pisina, Kavi Byarshan, and Kavi Syavarshan etc.		7900-7000 BCE?
Kavi Khusrow (Kay Husroy)		
Kavi Luhrasp, father of Vistaspa		~7050 BCE
Kavi Vistaspa (the patron of Zarathushtra I)	6000 years before Plato (11th century BCE) or 5000 years before Trojan war (1842 BCE)	~7000 BCE
Kavi Wahman		6950 BCE

Evidently, Zarathushtra I, a contemporary of Vistaspa, recompiled Asuraveda around 7000 BCE, which came to be known as Avestā. King Vistaspa struggled to maintain the sovereignty of Airan Kingdom but King Arjasp of Aratta Kingdom (Turkmenistan) posed a great challenge to him. Seemingly, the Kayanian kings lost their kingdom to the Aratta kings

around 6900 BCE. The Aratta kings reigned over Airan from 6900 BCE to 3000 BCE. According to Iranian legends, King In-Su-Kush-Siranna had celebrated Navroz 2000 years before the reign of King Cyrus (1198 BCE). It appears that the Assyrian and the Babylonian kings dominated over Airan around 3000-1300 BCE. Zoroaster II (1307-1230 BCE) was born in the Magha region and revived the Zoroastrianism. King Cyrus (1198-1188 BCE) of the Achaemenid Dynasty had declared Zoroastrianism as the state religion. Most probably, the later descendants of Kayanian Dynasty were ruling over Persia before the invasion of Alexander.

		Regnal Years	**In CE**
1.	Bahman	22	1064-1042 BCE
2.	Humāe, the daughter of Bahman	30	1042-1012 BCE
3.	Darab-i-Akbar or Darab Kiani	12	1012-1000 BCE
4.	Dara-i-Asghar (During his reign, Alexander conquered Persia.)	14	1000-986 BCE

The Origin of Jamshedi Navroz and Kerala's Onam Festival

The Parsi community of Gujarat, Maharashtra and Karachi celebrates Jamshedi Navroz (ancient Zoroastrian New Year) around 21st July to 21st Aug. Navroz is the most ancient festival of Persia to mark the celebrations of the arrival of spring season. According to traditional Zoroastrian history, Navroz has been observed for more than 15000 years. Firdausi's *Shahnama* relates that the legendary King Jamshed Jam conquered the world and ascended the throne at his capital Takht-i-Jamshed (Persepolis) 3100 years after Gayomart or Keyumars. He declared his coronation day as Navroz, the beginning of the Zoroastrian New Year. The name of Jamshed has been derived from the Avestan name "Yamah Xsaitah".

As I have already explained, Zoroastrianism has the legacy of Vedic Asuras, the cousin brothers of Vedic Devas of ancient India. According to Purāṇas, Agnīdhra's son Ketumāla reigned over the region of Afghanistan and Iran that came to be known as Ketumāla-Varṣa. Probably, the word "Keyumars" has been derived from Ketumala. According to Zoroastrian sources, Ahur Mazda's son Gayomart (Keyumars) lived for 3000 years. Thereafter, Ahura Mazda gave Gayomart the boon of sleep for respite

from the onslaught of Ahriman (Ahirmanyu, i.e., Indra or Vishnu). But after 30 years of attacks, Ahriman destroyed Gayomart. This story of Gayomart has some similarities with the legend of Gayāsura in which Brahma, Vishnu and Śiva asked Gayāsura to lie on his back on the ground without moving his body for seven days but he was tricked into moving his body and got killed.

Based on the probable identification of Gayomart, the son of Ahur Mazda, with Gayāsura, the son of Tripurāsura, we can roughly fix the date of Gayāsura, a contemporary of Śiva (11290-11200 BCE), around 11300-11250 BCE. The date of King Jamshed Jam can also be fixed around 11150 BCE. Since the time span of 3030 years had elapsed up to the death of Gayomart, the chronological history of Asuras might have commenced around 14300 BCE. Considering the position of summer solstice at Dhaniṣṭhā Nakśatra, Brahma and his son Svāyambhuva Manu flourished around 14500-14400 BCE. Ketumāla was the great grandson of Svāyambhuva Manu. Thus, the date of Ketumāla can be roughly fixed around 14350-14300 BCE. In all probability, Ketumāla, i.e. Keyumars, was the progenitor of Zoroastrians and Gayomart was a descendant of Keyumars, who lived 3000 years after Keyumars. It appears that the stories of Keyumars and Gayomart had been inadvertently mixed up by the Zoroastrian historians.

Devas and Asuras became bitter political rivals since the early Vedic period. Devas followed a calendar that commenced from summer solstice at Dhaniṣṭhā Nakśatra whereas Asuras followed a calendar that commenced from winter solstice at Āśleṣā Nakśatra. Taittirīya Brāhmaṇa indirectly indicates the ancient calendar of Asuras and mentions that during the conflict between the Devas and the Asuras, the Devas offered oblation to Sarpas, i.e. Aśleṣā Nakśatra, and successfully subdued the perpetual hatred of their cousin brothers. Gradually, the lunisolar calendar of Devas shifted to Śarad season and the lunisolar calendar of Asuras shifted to spring season around 11300 BCE. Thus, King Jamshed introduced the celebration of Navroz around 11150 BCE. At that time, spring season coincided with Sun's entry into Simha Rāśi (Leo). Old Persian Jamshedi or Shahanshahi lunisolar calendar traditionally followed

the date of Navroz from the time of Jamshed but spring season shifted from Leo to Aries during the time of Achaemanid King Cyrus. According to legends, King In-Su-Kush-Siranna had also celebrated Navroz 2000 years before Cyrus. He was the king of Aratta Kingdom. Most probably, he flourished during the era of the Mahābhārata. The Mahābhārata refers to the Aratta Kingdom.

Though Navroz is the celebration of the arrival of spring season, Zoroastrians traditionally preserved the date of King Jamshed's coronation. This may be the reason why traditionalists still celebrate the Jamshed-i-Navroz when Sun is in Simha Rāśi whereas others celebrate Navroz on the date of sun's entry into Aries. It is generally speculated that the Parsi immigrants of India did not account for leap years but the Zoroastrian solar calendar religiously followed the intercalation of a month after every 120 years since the time of Zoroaster II (1307-1230 BCE) and King Cyrus (1198 BCE), which perfectly reconciles with the Julian calendar. Prior to that, ancient Zoroastrians followed a lunisolar calendar that was almost similar to the Babylonian lunisolar calendar.

Interestingly, King Bali, the grandson of Prahlāda, also flourished around 11150-11100 BCE. He also belonged to the tradition of Asuras. Therefore, Kerala used to celebrate the arrival of New Year from spring season. During 11150 BCE, spring season commenced when Sun was in Simha Rāśi. This is the reason why Onam festival is celebrated in the solar month of Chingham. The word "Onam" is derived from Śroṇam, i.e. Śrāvaṇa. The month of Śrāvaṇa was the first month of spring season around 11150 BCE. Thus, Śrāvaṇa Utsav came to be known as Onam.

The Onam festival is celebrated for thirteen days from Hasta Nakśatra to Śatabhiṣaj Nakśatra. Seemingly, Onam festival had commenced when Abhijit still existed in the list of Nakśatras. Interestingly, Jamshed-i-Navroz is also celebrated for thirteen days from Farvardin 1 to 13. Evidently, Indian Asura tradition and Zoroastrian Asura tradition shared a common origin.

11

Ancient Indian Historical Tradition: A Rejoinder to Frederick Eden Pargiter

F.E. Pargiter, a British civil servant of India, was the author of “Ancient Indian Historical Tradition”, published in 1922. In his book, he has concluded that Brahmanic tales (Indian historical legends) are untrustworthy for traditional history because of the lack of historical sense. He also alleged that Kśatriya stories were often tampered with to subserve Brahmanical interests and it is mainly Brahmanical mistakes and absurdities that have discredited the Purāṇas. According to him, the legend of Uttaṅka is a farrago of absurdities and chronological errors, plainly Brahmanical. He has chronologically analyzed numerous Indian historical legends narrated in various sources to justify his conclusions. Unfortunately, none of the Indian historians have ever attempted to write a rejoinder to counter the arguments of Pargiter since 1922. I have decided to take upon this task, and write a rejoinder to Pargiter’s misunderstandings and mischievous assumptions, based on my chronological studies.

At the outset, the so-called distinction between Brahmanic tales and Kśatriya stories is nothing but a figment of imagination of the divisive and casteist mind-set of colonial historians. These Christian and Eurocentric historians had a dubious agenda to defame Sanskrit literature by declaring it as Brahmanic. They also projected Hinduism as Brahmanism and attempted to provoke other varnas against Brāhmaṇas (indirectly against Hinduism) so that the Christian missionaries in India could flourish. Therefore, the idea of Brahmanism is nothing but an intellectual fraud committed by colonial historians. Unfortunately, this fraudulent theory

evolved into an academic theory to discredit India's glorious past. Even today, Archaeological Survey of India unfortunately refers to ancient Hindu temples as Brahmanical structures. Most of the ancient Indian sculptors were neither Brāhmaṇas nor Kśatriyas. Moreover, the authors of Purāṇas were Sūtas and Māgadhas, not Brāhmaṇas. The wealth creators of ancient Indian society were also neither Brāhmaṇas nor Kśatriyas. It is an undeniable fact of social behaviour that every influential and powerful section of a society has exploited relatively weaker sections to some extant in every country of the world. The same has also been witnessed in ancient India. It is also a historical fact that many social reformers of ancient India fought against social discrimination, starting from the Vedic era to the time of Basavanna. Therefore, "Brahmanic" is a misleading term in historical studies.

First of all, we have to understand how the historical account had been written and updated periodically in ancient India. Indian tradition of writing history begins with the multigenerational record-keeping of genealogical lists, eulogies and legends of great kings and rishis since the early Vedic period. Sūta and Magadha, the sons of King Prithu (14050 BCE), and their descendants have been traditionally entrusted to maintain the historical account. Sūta Romaharṣaṇa (11100 BCE), the disciple of Veda Vyāsa, was the first who wrote a Saṁhitā to document the available history of Vedic period. Many disciples of Romaharṣaṇa also wrote Saṁhitās to document historical information. Unfortunately, none of these Saṁhitās is available today but the earliest Purāṇas were written in Laukika Sanskrit based on these Itihasa Saṁhitās. The earliest Bhaviṣyat Purāṇa was written in prose as quoted in Āpastamba Śrautasūtra. Vyāsa of the Mahābhārata era (3250-3124 BCE) updated available historical and Puranic account of ancient India into eighteen Purāṇas. These eighteen Purāṇas were periodically updated from the Mahābhārata era to the Post Gupta period. Some chapters of Bhaviṣya Purāṇa have been written during the Mughal period.

As I have already established, India's continuous civilization has a chronological history of more than 16500 years. Though Indian history (Itihasa and Purāṇas) became an important subject of study since 11100

BCE, it was not humanly possible to maintain the history of several thousands of years without any gaps and inaccuracies in genealogical account and mythological exaggerations in historical legends. Moreover, the five-year Yuga of Vedic era had gradually evolved into the Yuga of 1200 years and 432000 years in Indian calendrical astronomy. The twenty-year Chaturyuga of the post-Vedic era had also evolved into the Chaturyuga of 12000 years and 4320000 years. The concept of large Yugas has led to the evolution of the concept of Kalpa, fourteen Manvantaras and seventy-two Chaturyugas in each Manvantara.

Indian historians (the updaters of Purāṇas and Itihasa texts) of Dvāpara Yuga and Kaliyuga had mistakenly assumed these astronomical Yugas to be historical facts and had no other option but to interpret that certain greatest historical personalities might have lived for several lakhs or thousands of years (like Narakāsura lived for many yugas, Sagara lived for 60000 years and Rāma lived for 11000 years and so on). Though they divided the chronological history of ancient India into seven Manvantaras, they had to assume that Saptarṣis, great kings like Ikśvāku, Soma, Dakśa and more were reborn in the beginning of Vaivasvata Manvantara. Seemingly, later updaters of Purāṇas have erroneously mixed up the genealogies of pre-Vaivasvata and post-Vaivasvata eras. Interestingly, the original narratives of historical legends had been traditionally passed on to new generations and the same has been retold in Purāṇas. Therefore, the historical legends appear to be inconsistent with the genealogical chronology given in Purāṇas but in reality, Puranic updaters inadvertently edited the genealogical account to reconcile the chronology of large Yugas. Moreover, mistaken identities (like considering Soma I of the Svāyambhuva Manvantara and Soma II of the Vaivasvata Manvantara as identical, Veda-Vyāsa of the Rigvedic era and Vyāsa of the Mahābhārata era as identical, Krishna, a disciple of Ghora Āṅgirasa of the Rigvedic era and Krishna, a disciple of Sāndīpani of the Mahābhārata era as identical and so on) had also led to numerous chronological inconsistencies. Therefore, I would insist that we should give more importance to the historical legends narrated in Vedic and post-Vedic literature for solving the chronological and genealogical inconsistencies of ancient Indian history. Though certain mythological exaggerations

have been interpolated in historical legends later, the contemporaneity of various historic personalities indicated in these legends should be more authentic than the genealogical chronology given in Purāṇas. We have to reconstruct the chronological and genealogical account by validating the information provided in the historical legends.

F.E. Pargiter followed the genealogical chronology given in Purāṇas and attempted to reconcile the inputs given in historical legends but he had miserably failed to do so because he lacked insight about the true chronology of Vedic and post-Vedic literature. Let us discuss the chronological inconsistencies flagged by F.E. Pargiter.

1. *Pargiter says that Vedic texts, notoriously, are not books of historical purpose, nor do they deal with history. For instance, Nahuṣa and Yayāti were ancient kings but the mention of Yadu, Turvaṣa, Druhyu, Anu and Puru in Rigveda is generic, referring to the families and kings descended from them.*

   Rigveda is the oldest book and traditionally preserved in its original form since ancient times whereas Purāṇas are the later texts that have been updated from time to time. Therefore, Rigvedic inputs of Indian history must be more authentic than Purāṇas. Interestingly, Pargiter rejects Rigvedic references based on the genealogical details given in Purāṇas. According to Purāṇas, Yadu, Turvasu, Anu, Druhyu and Puru were the sons of Yayāti of Vaivasvata Manvantara. But Rigveda clearly indicates the existence of these dynasties before Vaivasvata Manu. Evidently, the sons of Yayāti were not the progenitors of Yadu, Turvasha, Anu, Druhyu and Puru dynasties. I have also explained earlier how the genealogies of these dynasties given in Purāṇas validate the historical references found in Rigveda. Therefore, Vedic texts are indeed the books of historical purpose and provide valuable information to correct the errors committed by the updaters of Purāṇas.

2. *Pargiter says "Bharata and his descendants are introduced, but he himself was a bygone figure". According to him, Viśvāmitra I is wrongly called Bharata-Riṣabha in the story of Śunaḥśepa. Śatapatha Brāhmaṇa (13.5.4.9 & 21) says that Bharata seized the sacrificial horse of the Sātvatas and adds that his descendants, the Bharatas, were*

greater than those of any other king. King Bharata was born long prior to the birth of Sātvatas.

There were three Bharatas. Bharata I (14275 BCE) was the son of Riṣabha. Bharata II (13450-13400 BCE) was the son of Duṣyanta of the Puru dynasty. Bharata III (11080 BCE) was a descendant of Puru II, a son of Yayāti. Seemingly, Puranic updaters mixed up the historical account of Bharata II and Bharata III but Pargiter blames Vedas and Brāhmaṇas for not following the genealogical chronology of Purāṇas. Actually, Bharata II was the progenitor of Bharata dynasty, whereas Bharata III seized the sacrificial horse of Sātvatas. Thus, there is no chronological inconsistency.

3. *The legends like Soma's abduction of Brihaspati's wife Tārā and the birth of their son Budha, the birth of Ilā from Manu's sacrifice and the marriage of Śiva and Pārvatī are mythological, not historical.*

   Rigveda (10.109.2) also indicates Soma's abduction of Brihaspati's wife Tārā. Budha I was the son of Soma I and Tara and Budha II was the son of Soma II and Rohiṇī, a daughter of Dakśa Prajāpati. Iḍā was the wife of Manu, whereas Ilā was the daughter of Vaivasvata Manu. Budha II married Ilā. Taittirīya Āraṇyaka indicates that Iḍā introduced the Vedic ritual of three Agnis. This is the reason why the mythical story of the birth of Iḍā from Manu's sacrifice had evolved later. Śiva was a historical figure and lived around 11300-11200 BCE.

4. *Tapati, wife of the Paurava king Saṁvarṇa, was the daughter of Saura, Sūrya or Tapana. Saṁvarṅa's priest Vasiṣṭha went to Sūrya and obtained Tapati for him. But Tapati's father being confused with the Sun, she became the Sun's daughter and accordingly she is foisted into the myth of the Sun and his wives as his daughter along with his sons Manu Vaivasvata, Yama and the Aśvins, confusing historical tradition with mythology and all with an utter disregard of chronological consistency.*

   Pargiter mistakenly considers Sūrya, Tapana Sūrya and Vaivasvata as identical and blames Brāhmaṇas for the chronological inconsistency. I have already explained that Sūrya I, the father of Aśvins, lived around 13600 BCE and Vivasvān, the father of Vaivasvata Manu flourished around 11300 BCE. Tapana or Sūrya II, the father of Tapati

was a descendant of Sūrya and lived around 11470 BCE. Rigveda (8.3.16) refers to Bhrigus, Kaṇvas and Sūryas. Evidently, a lineage of Sūrya (not Sūryavaṁśa of Vivasvān) existed in the Rigvedic era. King Saṁvaraṇa, son of Rikśa and grandson of Ajamīḍha II, lived around 11430 BCE and married Tapati. Kuru, the progenitor of Kuru dynasty was the son of Tapati and King Saṁvaraṇa. Tapati River (between Narmadā and Godāvarī rivers) has been named after the mother of Kuru.

5. *Brihaddevatā (4.112) and the Vedārthadīpikā on Rigveda (3.53) make the first Viśvāmitra, son of Gāthi, contemporary with Śakti Vasiṣṭha who lived far later.*

   Gādhi, the father of Viśvāmitra I, lived around 13550 BCE whereas Gāthi, the father of Viśvāmitra II, lived around 11230 BCE. Viśvāmitra II was the contemporary of Śakti Vasiṣṭha and not Viśvāmitra I. Viśvāmitra II had a title of Bharata Riṣabha. Evidently, Viśvāmitra II was born in the lineage of Bharatas. It is well known that Bharata, the grandson of Viśvāmitra I, was the progenitor of Bharatas.

6. *The mythology was also turned into history. Thus, Śiva and Pārvatī are introduced into the account of the long war between the Haihayas and the kings of Kāshi.*

   Śiva and Pārvatī were historical persons and lived around 11300-11200 BCE. Aparṇā or Pārvatī was a daughter of King Himavant. I have chronologically established that Kāshi kings (Pratardana to Alarka) were in conflict with Haihayas during the lifetime of Śiva.

7. *Introduction of Agastya into a story about King Nahuṣa, but the Agastyas did not exist then.*

   Rishi Agastya lived around 11300-11200 BCE and the contemporary of Śiva. King Nahuṣa II (11200 BCE) was the son of Ayu and the grandson of Purūravā. There was another Nahuṣa I, son of Manu, lived around 11350-11260 BCE. Most probably, Agastya I was either the junior contemporary of Nahuṣa I or the senior contemporary of Nahuṣa II. Pargiter mistakenly assumes that the Agastyas did not exist during the lifetime of Nahuṣa.

8. *The extraordinary tale of Gālava and Yayāti's daughter.*

   According to the story of Gālava given in the Mahābhārata and Purāṇas, Gālava approached King Yayāti I in order to earn Gurudakśiṇā for his Guru Viśvāmitra II. Gālava obtained Mādhavī, daughter of Yayāti, and offered her in turn to King Rohidāśva of Ayodhyā, King Divodāsa of Kāshi, King Uśīnara of Bhojanagara and Viśvāmitra II. They begot of her one son each, Vasumanas, Pratardana, Śibi and Aṣṭaka. Then Gālava returned Mādhavī to her father. This story indicates that Gālava was a contemporary of Divodāsa and Pratardana. Rigveda clearly indicates the contemporaneity of Śivi, Pratardana and Vasumanas (10.179). Pargiter mistakenly considers Yayāti as the son of Nahuṣa and the grandson of Ayu. Rigveda indicates that King Saṁvaraṇa (11430 BCE) had another son named Manu. Manu's son was Nahuṣa I (11360 BCE) and Nahuṣa I's son was Yayāti I. Thus, Gālava was a contemporary of Yayāti I (11340 BCE) and not Yayāti II (11180 BCE).

9. *The story of Uttaṅka is a farrago of absurdities and chronological errors, plainly Brahmanical.*

   Rishi Uttaṅka was the disciple of Rishi Veda. Rishi Dhaumya, the younger brother of Rishi Devala I, was the guru of Rishi Veda. There were many Devalas. Rishi Devala II was the pupil of Vyāsa I (11180-11050 BCE), the son of Parāśara. Rishi Uttaṅka was the contemporary of King Pauṣya, Nāga king Takśaka II and King Janamejaya, son of Parikśit. Ikśvāku King Kuvalayāśva I was a senior contemporary of Rishi Uttaṅka. Kuvalayāśva killed Asura King Dhundhu, a son or a descendant of Madhu and Kaiṭabha and came to be known as Dhundhumāra. Vishnu killed Madhu and Kaiṭabha. Maitrāyaṅī Upaniṣad mentions the names of great kings like Marutta, Bharata, Sudyumna, Bhūridyumna, Indradyumna, Kuvalayāśva, Yauvanāśva, Vadhyāśva, Aśvapati, Śaśabindu, Hariśchandra, Ambarīṣa, Nanaktu, Śaryāti, Yayāti, Anaraṇya and Ukśasena. Evidently, Kuvalayāśva flourished before Yuvanāśva and Yauvanāśva. Seemingly, Kuvalayāśva was the father of Yuvanāśva. Thus, we can fix the lifetime of Uttaṅka around 11160-11060 BCE. Another version of the legend of Uttaṅka mentions Rishi Veda and King Pauṣya as Rishi Gautama and King

Mitrasaha Saudāsa (Kalmāṣapāda) respectively. King Kalmāṣapāda also flourished around 11225-11140 BCE. In fact, the ignorance of the true chronology of Rigvedic period led to the assumption that the story of Uttaṅka is a farrago of chronological absurdities.

10. *The order of the kings in Aitareya Brāhmaṇa (7.5.34) is wrong.*
    Aitareya Brāhmaṇa (7.34) mentions the following kings and rishis.

	Vedic Kings	Rishis
1.	**Viśvantara Sauṣadmana** (11150 BCE)	Rāma Bhārgaveya (Paraśurāma)
2.	**Janamejaya** Pārīkśita (11270 BCE)	Tura Kāvaśeya
3.	**Somaka** son of Sahadeva (11225 BCE)	Parvata and Nārada
4.	**Sahadeva**, son of Sriñjaya (11200 BCE)	
5.	**Babhru,** son of Devavriddha (11200 BCE)	
6.	**Bhima,** King of Vaidarbha (11200 BCE)	
7.	**Nagnajit,** son of Gāndhāra (11200 BCE)	
8.	**Sanaśruta,** son of Arindama (10870 BCE)	Rishi Agni
9.	**Kratuvid,** son of King Janaka (10870 BCE)	
10.	**Sudāsa,** son of Pijavana (11270 BCE)	Vasiṣṭha

Seemingly, Pargiter thinks that the contemporaneity of Somaka, Sahadeva, Babhru, Bhima and Nagnajit cannot be established. I have established that all these five kings were contemporaries of Rishis Parvata and Nārada. There is no chronological inconsistency.

11. *Bhārgava Rishi Urva's son was Richīka, his son was Jamadagni and his son was Rāma; and a descendant was Aurava Agni who lived in Sagara's time.*
    Aurava means a descendant of Urva. Thus, Bhārgava Rishi Agni was a contemporary of King Sagara. Later Puranic updaters speculated that Agni was born from the thigh (Uru) of Urva or his mother. There is no chronological inconsistency.

12. *Rishi Saubhari married Māndhātā's fifty daughters. The story of Saubhari seems to have grown out of the statement in Rigveda (8.19.36) that Trasadasyu Paurukutsya gave Sobhari fifty maidens.*

Brihaddevatā says the maidens were Kākustha maidens. [Adān me Paurukutsyāḥ Pañchāśatam trasadasyur vadhūnām…].

Māndhātā was the son of Yuvanāśva and a descendant of Kakustha. Purukutsa was the son of Māndhātā and Trasadasyu was the grandson of Māndhātā. Rishi Saubhari himself mentions in Rigveda that Trasadasyu, son of Purukutsa gave fifty Vadhus (brides). Probably, the fifty girls were the daughters or granddaughters of King Māndhātā.

13. *The story of Āpastamba-tīrtha and that of Bhānutīrtha where however the collocation of Madhucchandas with Śaryāti is absurd.*

    Madhucchandas was the son of Viśvāmitra II (11225 BCE). There were two Śaryātis. Śaryāti I was the son of Vītahavya and lived around 13550 BCE, whereas Śaryāti II was the son of Vaivasvata Manu (11270 BCE). Evidently, Śaryāti II was a senior contemporary of Madhucchandas.

14. *The Ramayana is highly Brahmanical and its stories fanciful and often absurd.*

    Hanuman, Sugriva, Vāli and the rest were not Kapis or Vānaras. They belonged to the lienage of Vāyu and Kapi. Since Kapi became synonymous with monkey in Laukika Sanskrit, later updaters of the Rāmāyaṇa speculated them to be Vānaras. Rāma built a Setu of 100 Yojanas on Samudra. Yojana was a smaller unit equal to 165 or 175 meters. Thus, Rāma built a Setu of 16.5 or 17.5 km. The description of Puṣpaka Vimāna indicates that it was like a hot air balloon. Natural silk might have been used as a fabric to make hot air balloon. Since the length of a Yuga had been increased from 1200 years to 432000 years, the later updaters of the Rāmāyaṇa have speculated that Sagara lived for 60,000 years and Rāma reigned for 11000 years. It is true that later updaters have exaggerated certain events of the Rāmāyaṇa poetically and mythologically but the story of the Rāmāyaṇa is absolutely historical.

15. *Another instance is the curious Pitri Vaṁśa. The seven classes of Pitars had each one Mānasa kanyā namely, Mīnā, Acchodā, Pīvarī, Go, Yaśodā, Virājā and Narmadā. Mīnā was wife of Mount Himavant. They*

had a son named Maināka and three daughters, Aparṇā, Ekaparṇā and Ekapātāla. Aparṇā became the goddess Umā; Ekaparṇā married the Rishi Asita and had a son the Rishi Devala; and Ekapātāla married Śataśilaka's son the Rishi Jaigīṣavya and had two sons, Śaṅkha and Likhita. Acchodā was born as Dāseyi from King Vasu of Chedi and a fish who was the apsaras Adrikā; and she became (Kāli) Satyavati, who was mother of Vyāsa by Parāśara, and of Vichitravīrya and Chitrāṅgada by King Śāntanu. Pīvarī was wife of Vyāsa's son Śuka and had five sons and a daughter Kīrtimatī who was Anūha's queen and Brahmadatta's mother. Go, called also Ekaśriṅgā, married the great Rishi Śukra and was ancestress of the Bhrigus. Yaśodā was wife of Viśvamahat, daughter-in-law of Vriddhaśarman, and mother of Dilīpa II Khatvāṅga. Virājā was wife of Nahuṣa and mother of Yayāti. Narmadā, the river, was wife of Purukutsa and mother of Trasadasyu. The genealogies say that Nahuṣa's sons were born of pitri kanyā Virājā, connect a pitri-kanyā with Viśvamahat, and call Kritvī a pitri-kanyā. There can be no doubt that the word means 'father's daughter, that is sister, for union between brother and sister was not unknown, as Rigveda X, 10 about Yama and Yami shows. Nahuṣa and Viśvamahat married their sisters. But the Brahmans misunderstood and perverted the word to mean 'daughter of Pitris', thus mythologizing it. Satyavatī, as a queen and great grandmother of the Pāndavas, was ennobled by the Kśatriyas in the fable making her the offspring of Vasu, king of Chedi; and as mother of the great Vyāsa, by Brahmans in the additional fable that she was a daughter of the Pitars.

Ancestors were called Pitars in Purāṇas. There are broadly two classes of Pitars: Deva-Pitars and Mānuṣya-Pitars. It is believed that Deva-Pitars will be reborn at the end of every Manvantara. There are seven categories of Deva Pitars: Virāja, Agniśvatta, Barhiṣada, Somapa, Haviṣmāna, Ājyapa and Mānasa. The daughters of Deva-Pitars or their descendants were called as Pitri-Kanyas.

Pargiter mischievously interprets Pitri-Kanyā as a sister. He also quotes Rigveda. The hymn of Rigveda (10.10) is a dialogue between Yama and Yami, son and daughter of Vivasvān. Yami requests his brother Yama for casual sex in a nirjana pradeśa (a secluded place).

She says that even some Devas (Amritasah) had casual sex with their sisters but Yama tries to convince his sister why such act would be immoral. In this context, there is no reference that Devas ever married their sisters. Possibly, there might have been some rare incidents of having casual or forced sex among brothers and sisters but it does not mean that marriage between brothers and sisters was socially acceptable. Moreover, Rigvedic hymn of Yama and Yami unambiguously tells us that sexual relationship between brothers and sisters was considered to be a sin. Therefore, Pitri-kanyā cannot be interpreted as a sister.

The following chronological inconsistencies flagged by Pargiter are related to the Mahābhārata era. In fact, Puranic updaters had mixed up the historical account given in Jaiminīya Aśvamedha and Vyāsa's Mahābhārata, considering Veda Vyāsa of the Rigvedic era and Vyāsa of the Mahābhārata era as the same person. Unfortunately, we do not have the original texts of Jaiminīya Aśvamedha and Vyāsa's Mahābhārata. We have no other option but to rectify these inconsistencies based on internal evidence of Vedic and post-Vedic texts.

16. *The chronological ignorance produces at times the most absurd positions, as where persons are made to describe events long posterior to their time; thus King Dilīpa of Ayodhyā is instructed by his priest Vasiṣṭha about Kamsa's tyranny and Krishna's birth.*

    I have already established that Devakīputra Krishna, disciple of Rishi Ghora Āṅgirasa, lived around 11150-11050 BCE who built the city of Dvāravatī and killed Narakāsura. Purāṇas mistakenly considered Krishna of the Rigvedic era and Krishna of the Mahābhārata era as the same person. Ayodhyā King Dilīpa was the great grandfather of Rāma and lived around 5800 BCE.

17. *The Brahmanic versions are a farrago of absurdities and impossibilities, utterly distorting all the incidents. For example, the story of Bhishma and Ugrāyudha in Harivaṁśa. From Brahmadatta's grandfather Śuka down to Vyāsa's son Śuka, there were some six generations. The Kśatriya genealogies and traditions keep the two Śukas distinct but the Brahmanical Vaṁśas in their attempt to construct Vyāsa's*

family identify the two, give Vyāsa's son Śuka a daughter Krītimatī, say she was Anūha's queen and Brahmadatta's mother, and so make Brahmadatta great grandson of Vyāsa, thus misplacing Anūha and Brahmadatta from their true position to one some six generations later. Kśatriya tradition is right, and the Brahmanical lack of the historical sense produces the absurdity that Anūha or Brahmadatta would have been king of Pāñchāla at the time of the Bharata battle when, as the Mahābhārata shows, Drupada was reigning there.

There were two Brahmadattas. Brahmadatta I was a son of Rishi Chūli as mentioned in the Rāmāyaṇa. He became the King of Kāmpilya and reigned around 13550 BCE. Brahmadatta II was the son of Puru king Anūha and Kīrtimatī, daughter of Rishi Śuka I. He was a senior contemporary of Kuru King Pratīpa. Rishi Gālava II, the founder of Śikśā and Krama-Pātha of Vedas, was a classmate of Brahmadatta II (11325 BCE).

Harivaṁśa indicates that Ugrāyudha (11150 BCE) was a contemporary of Devavrata Bhishma. He sent a messenger to the Kuru Kingdom and proposed to marry Gandhakāli, mother of Devavrāta Bhishma with an intention to insult him. Devavrāta Bhishma killed Ugrāyudha in a battle. As I have explained earlier, some of the Vedic kings also had names like Vichitravīrya, Dhritarāṣṭra, Bhishma, Bhimasena, Dharmarāja, Karṇa (Radheya), Parīkśit, Janamejaya and so on. These kings flourished around 11200-11000 BCE. Seemingly, Puranic historians erroneously mixed up the historical account of these Vedic kings with that of the Mahābhārata era, which led to numerous chronological inconsistencies.

Suka II was the son of Veda Vyāsa. Harivaṁśa says that Brahmadatta II married Kīrtimatī, daughter of Śuka I. Ugrāyudha lived at least eighty years later than Brahmadatta II. Actually, Devavrāta or Bhishma I of the Vedic era was the son of Gandhakāli, whereas Bhishma II of the Mahābhārata era was the son of Śāntanu III. Ugrāyudha was a contemporary of Bhishma I and not Bhishma II.

It may also be noted that Suka II was the son of Vyāsa of the Rigvedic era and not the son of Vyāsa of the Mahābhārata era. Bhishma II tells the story of the birth of Śukāchārya to Yudhiṣṭhira in Mokśa Dharma

Parva of Śānti Parva of the Mahābhārata. Evidently, Śukāchārya lived in the Vedic era and he was not a contemporary of the Mahābhārata era.

18. *The Brahmanical Śānti Parva says that Bhishma learnt Dharma from Bhārgava Chyavana, Vasiṣṭha, Mārkandeya and Paraśurāma. Similarly, Droṇa is said to have visited Rāma Jāmadagnya.*

    It is stated in the Śānti Parva of Mahābhārata that Bhishma studied under Bhārgava Chyavana, Vasiṣṭha, Brihaspati, Śukrāchārya, Mārkandeya and Paraśurāma.

    श्रोतुम् इच्छसि चेद् धर्मान् अखिलेन युधिष्ठिर
    प्रैहि भीष्मं महाबाहो वृद्धं कुरुपितामहम् ॥
    स ते सर्वरहस्येषु संशयान् मनसि स्थितान्
    छेत्ता भागीरथीपुत्रः सर्वज्ञः सर्वधर्मवित् ॥
    जनयामास यं देवी दिव्या त्रिपथगा नदी
    साक्षाद् ददर्श यो देवान् सर्वान् शक्रपुरोगमान् ॥
    बृहस्पतिपुरोगांश्च देवर्षीन् असकृत् प्रभुः
    तोषयित्वोपचारेण राजनीतिम् अधीतवान् ॥
    उशना वेद यच्छास्त्रं देवासुरगुरुः द्विजः
    तच्च सर्वं स वैयाख्यं पराप्तवान् कुरुसत्तमः ॥
    भार्गवाच्च्यवनाच् चापि वेदान् अङ्गोपबृंहितान्
    प्रतिपेदे महाबुद्धि वसिष्ठाच् च यतव्रतात् ॥
    पितामहसुतं ज्येष्ठं कुमारं दीप्ततेजसम्
    अध्यात्मगतितत्त्वज्ञम् उपाशिक्षत यः पुरा ॥
    मार्कण्डेयमुखात् कृत्स्नं यतिधर्मम् अवाप्तवान्
    रामाद् अस्त्राणि शक्राच्च प्राप्तवान् भरतर्षभ ॥

    In fact, Devavrata Bhishma I of the Vedic era learnt Dharma from Bhārgava Chyavana, Vasiṣṭha, Mārkanḍeya and Paraśurāma. Droṇa I of the Vedic era visited Rāma Jāmadagnya. Actually, Droṇa I married Kripī, sister of Kripāchārya. Bhishma II of the Mahābharata era was not a contemporary of Bhārgava Chyavana, Vasiṣṭha, Brihaspati, Śukrāchārya, Mārkandeya and Paraśurāma.

19. *The genealogy of a branch of kings descended from the Yādava king Lomapāda.*

There is no chronological inconsistency in the genealogy of the descendants of Yādava King Lomapāda. Lomapāda was the son of King Vidarbha. Puranic historians mistakenly assumed King Vidarbha to be a descendant of King Śaśabindu. In fact, King Vidarbha lived around 12100 BCE, whereas King Śaśabindu flourished around 11180 BCE. Māndhātā (11150 BCE) married a daughter of King Śaśabindu.

20. *The wildest instance of this are the lists of rishis who assembled at the twelve-year sacrifice in Naimiṣa forest, of those visited Bhishma on his death bed; and of those who attended when Yudhiṣṭhira was installed as king*.

    As I have already explained, Puranic updaters had mixed up the historical account given in Jaiminīya Aśvamedha and Vyāsa's Mahābhārata considering Vyāsa of the Vedic era and Vyāsa of the Mahabharata era as the same person. The so-called chronological inconsistencies in the lists of rishis are the outcome of the mistakes committed by Puranic historians.

References

Chapter 1

1. Indian Antiquary, Vol. V, 1876, pp.70 ff.
2. Epigraphia Carnatica, Vol. VIII, Tirthahalli, No. 157 and Epigraphia Carnatica, Vol. VII, Shikarpur, No. 45.
3. http://www.hup.harvard.edu/catalog.php?isbn=9780674725232
4. Sūrya Siddhānta, 1.57-58.
5. Mahābhārata, Vana Parva, Adhyāya 219.

Chapter 2

1. Atharvaveda 8.2.21
2. "Astronomy of Vedic Altars" by Subhash Kak, Vistas in Astronomy, Vol. 36, pp.117-140, 1993.
3. Sūrya Siddhānta, 1.57-58 (*Asmin Kritayugasyānte Sarve Madhyagatāḥ grahāḥ, Vinā tu pātamandocchān Meṣādau Tulyatāmitāḥ*).
4. Rigveda, 1.158.6.
5. Vedānga Jyotisha 5-6. (स्वराक्रमेते सोमार्कौ यदा साकं सवासवौ। स्यात्तदादियुगं माघस्तपः शुक्लोऽयनं ह्युदक्॥ प्रपद्यते श्रविष्ठादौ सूर्याचन्द्रमसावुदक्। सार्पार्धे दक्षिणार्कस्तु माघश्रावणयोः सदा॥)
6. Rigveda, 7.103.
7. Rigveda, 3.23.4.
8. Rigveda, 1.73, 4.5, 6.52, 7.88, and 10.173.
9. Mahābhārata, Aśvamedha Parva 44.2 (*Śraviṣṭhādīni Rikśāni*).
10. Rigveda, 10.191.12.
11. Rigveda, 10.85.13.
12. Rigveda, 10.85.13.
13. Rigveda, 10.19.1.

14. Rigveda, 7.69.2.
15. Rigveda, 1.62.9.
16. Rigveda, 4.51.4 & 3.67.6.
17. Taittirīya Brāhmaṇa, 3.1.6.
18. Rigveda, 4.50.4.
19. Ramayana, Bālakānda, Sarga 32.12-19.
    स महात्मा कुलीनायाम् युक्तायाम् सुमहाबलान्। वैदर्भ्याम् जनयामास चतुरः सदृशान् सुतान्॥ कुशाम्बम् कुशनाभम् च आसूर्तरजसम् वसुम्। कुशाम्बः तु महातेजाः कौशांबीम् अकरोत् पुरीम्॥ कुशनाभः तु धर्मात्मा पुरम् चक्रे महोदयम्। असूर्तरजसो राम धर्मारण्यम् महामतिः॥ चक्रे पुरवरम् राजा वसुर्नाम गिरिव्रजम्। सुमागधी नदी रम्या मागधान् विश्रुता आययौ। पंचानाम् शैल मुख्यानाम् मध्ये माला इव शोभते।
20. Mahābhārata 1.65.34 (प्रति श्रवणपूर्वाणि नक्षत्राणि ससर्ज यः).
21. Rāmāyaṇa 1.57.4-5 (पूर्णे वर्ष सहस्रे तु ब्रह्मा लोक पितामहः। अब्रवीत् मधुरम् वाक्यम् विश्वामित्रम् तपो धनम्॥).
22. Gopatha Brāhmaṇa, 2.6.1.
23. Rigveda, 7.69.2-3.
    स पंप्रथानो अभि पञ्च भूमा त्रिवन्धुरो मनसा यातु युक्तः । विशो येन गच्छथो देवयन्तीः कुत्रा चिद्याममश्विना दधाना। स्वश्वा यशसा यातमर्वाग्दस्रा निधिं मधुमन्तं पिबाथः । वि वां रथो वध्वा३ यादमानोऽन्तान्दिवो बाधते वर्तनिभ्याम्।
24. Rigveda, 1.45.6.
25. Rigveda, 1.44.7.
26. Rigveda 10.33.
27. Pañchaviṁśa Brāhmaṇa (25.16), Kāthaka Saṁhitā (22.3) and Taittirīya Saṁhitā (5.6.5.3)
28. Jaiminīya Upaniṣad Brāhmaṇa, 2.6.2.
29. Rigveda, 4.42.
30. Rigveda, 10.33.
31. Bhāgavata Purāṇa, 9.20.
32. Aitareya Brāhmaṇa, 8.23.
    एतेन ह वा ऐन्द्रेण महाभिषेकेण दीर्घतमा मामतेयो भरतं दौष्यन्तिमभिषिषेच । ...... तदप्येते श्लोका अभिगीताः।
    हिरण्येन परीवृतान् कृष्णान् शुक्लदतो मृगान्।
    मष्णारे भरतो ऽ ददाच्छतं बद्धानि सप्त च॥
    भरतस्यैव दौष्यन्तेरग्निः साचिगुणे चितः।
    यस्मिन् सहस्रं ब्राह्मणा बद्वशो गावि भेजिरे॥

अष्टासप्ततिं भरतो दौष्यन्तिर्यमुनामनु।
गङ्गायां वृत्रघ्नेऽबध्नात् पञ्चपञ्चाशतं हयान्॥
त्रयस्त्रिंशच्छतं राजाऽश्वान् बध्वाय मेध्यान्।
दौष्यन्तिरत्यगाद्राज्ञो मायां मायावत्तरः॥
महाकर्म भरतस्य न पूर्वे नापरे जनाः।
दिवं मर्त्य इव हस्ताभ्यां नोदापुः पञ्च मानवाः॥

33. Śatapatha Brāhmaṇa, 13.5.4.12 (*Trayastriṁśam śatam rājāśvān baddhvā medhyān Saudyumniratyaṣṭhādanyānamāyānmāyavattara iti ।*).
34. Rigveda, 5.27.
35. Rigveda, 6.31-32.
36. Rigveda, 4.43-44.
37. Rigveda, 8.68.17.
38. Rāmāyaṇa, 1.33.11-15.

    एतस्मिन् एव काले तु चूली नाम महाद्युतिः।
    ऊर्ध्व रेताः शुभाचारो ब्राह्मम् तप उपागमत्॥
    तपस्यंतम् ऋषिम् तत्र गंधर्वी पर्युपासते।
    सोमदा नाम भद्रम् ते ऊर्मिला तनया तदा॥
    अपतिः चास्मि भद्रम् ते भार्या च अस्मि न कस्यचित्।
    ब्राह्मेण उपगतायाः च दातुम् अर्हसि मे सुतम्॥
    तस्याः प्रसन्नो ब्रह्मर्षिर् ददौ ब्राह्मम् अनुत्तमम्।
    ब्रह्मदत्त इति ख्यातम् मानसम् चूलिनः सुतम्॥
    स राजा ब्रह्मदत्तः तु पुरीम् अध्यवसत् तदा ।
    कांपिल्याम् परया लक्ष्या देवराजो यथा दिवम्॥

39. Mahābhārata, Anuśāsana Parva, 30th Adhyāya.
40. Brahmāṇḍa Purāṇa, Madhyabhāga, 1st Adhyāya, 101-112.
41. Mahābhārata 1.105.
42. Vayu Purāṇa, 99th Adhyāya.
43. Mārkandeya Purāṇa, 75th Adhyaya.

    पञ्चमोऽपि मनुर्ब्रह्मन् रैवतो नाम विश्रुतः ।
    तस्योत्पत्तिं विस्तरशः शृणुष्व कथयामि ते॥ 75.1 ॥
    ऋषिरासीन्महाभाग ऋतवागिति विश्रुतः ।
    तस्यापुत्रस्य पुत्रोऽभूद्रेवत्यन्ते महात्मनः॥ 75.2 ॥
    रेवत्यन्ते मुनिश्रेष्ठ ! जातोऽयं तनयस्तव ।
    तेन दुः खाय ते दुष्टे काले यस्मादजायत॥ 75.18 ॥

न तेऽपचारो नैवास्य मातुर्नायं कुलस्य ते ।
तस्य दौः शील्यहेतुस्तु रेवत्यन्तमुपागतम् ॥ 75.19 ॥
तेनैवं व्याहृते शापे रेवत्यृक्षं पपात ह ।
पष्यतः सर्वलोकस्य विस्मयाविष्टचेतसः ॥ 75.21 ॥
रेवत्यृक्षञ्च पतितं कुमुदाद्रौ समन्ततः ।
भावयामास सहसा वनकन्दरनिर्झरम् ॥ 75.22 ॥
रेवत्यृक्षं न वै भद्रे चन्द्रयोगि व्यवस्थितम् ।
अन्यानि सन्ति ऋक्षाणि सुभ्रु वैवाहिकानि ते ॥ 75.55 ॥
एवं भवतु भद्रन्ते भद्रे प्रीतिमती भव ।
आरोपयामीन्दुमार्गे रेवत्यृक्षं कृते तव ॥ 75.62 ॥
ततस्तपः प्रभावेण रेवत्यृक्षं महामुनिः ।
यथापूर्वं तथा चक्रे सोमयोगि द्विजोत्तम ॥ 75.63 ॥

44. Rigveda, 9.106.

Chapter 3

1. Rigveda, 9.96.
2. Rigveda, 10.179.
3. Rigveda, 4.30.

   उत दासं कौलितरं बृहतः पर्वतादधि। अवाहन्निन्द्र शम्बरम् ॥14 ॥

   शतमश्मन्मयीनां पुरामिन्द्रो व्यास्यत्। दिवोदासाय दाशुषे ॥20 ॥
4. Rigveda, 8.96.13-15.
5. Rigveda, 8.45.26-27.
6. "The Chronology of India: From Mahābhārata to Medieval Era" by Vedveer Arya, Aryabhata Publications, Hyderabad, 2019, Chapter 21.
7. Rigveda, 8.27-31.
8. Rigveda, 10.90.
9. Taittirīya Āraṇyaka, Prapāthaka 10, Anuvāka 13.
10. Rigveda, 7.33.10-11.

    विद्युतो ज्योतिः परि संजिहानं मित्रावरुणा यदपष्यतां त्वा।

    तत्ते जन्मोतैकं वसिष्ठागस्त्यो यत्त्वा विश आजभार ॥10 ॥

    उतासि मैत्रावरुणो वसिष्ठोर्वश्या ब्रह्मन्मनसोऽधि जातः।

    द्रप्सं स्कन्नं ब्रह्मणा दैव्येन विश्वे देवाः पुष्करे त्वाददन्त ॥11 ॥
11. Rigveda 10.19.1

नि वर्तध्वं मानु गातास्मान्सिषक्त रेवतीः।
अग्नीषोमा पुनर्वसू अस्मे धारयतं रयिम् ॥1॥

12. Rigveda, 1.161.13.
    सुषुप्वांस ऋभवस्तदपृच्छतागोह्य क इदं नो अबूबुधत् ।
    श्वानं बस्तो बोधयितारमब्रवीत्संवत्सर इदमद्या व्यख्यत॥13॥
13. Mahānārāyaṇopaniṣad, 1.29.
14. Ibid, 1.38.
15. Cḥāndogyopaniṣad, 3.17.6.
16. Rigveda, 3.36.10.
17. Kauṣītakī Brāhmaṇa, 30.6.
18. Śatapatha Brāhmaṇa, Kānda 1, Adhyāya 8, Brāhmaṇa 1.
19. Rigveda, 10.129.
20. Rigveda, 10.95.
21. Rigveda, 10.60.4.
22. Rigveda, 10.134.
23. Rigveda, 1.112.13.
24. Rigveda, 9.101.4-6.
25. Rigveda, 10.49.8.
26. Rigveda, 9.101.7-9; 10.80.6 & 10.99.7.
    अग्निं विश ईळते मानुषीर्या अग्निं मनुषो नहुषो वि जाताः ।
    अग्निर्गान्धर्वीं पथ्यामृतस्याग्नेर्गव्यूतिर्घृत आ निशत्ता ॥10.8.6॥
    स द्रुह्वणे मनुष ऊर्ध्वसान आ साविषदर्शसानाय शरुम् ।
    स नृतमो नहुषोऽस्मत्सुजातः पुरोऽभिनदर्हन्दस्युहत्ये॥10.99.7॥
27. Rigveda, 10.9.
28. Aitareya Brāhmaṇa, 7.3.1.
    हरिश्चन्द्रो ह वैधस ऐक्ष्वाको राजा अपुत्रः आस। तस्य ह शतं जाया बभूवुः तासु पुत्रं न लेभे। तस्य ह पर्वतनारदौ गृह ऊषतुः। अथैनमुवाच वरुणं राजानमुपधाव पुत्रो मे जायतां तेन त्वा यजा इति तथेति। स वरुणं राजानमुपससार पुत्रो मे जायतां तेन त्वा यजा इति तथेति। तस्य ह पुत्रो जज्ञे रोहितो नाम तं होवाचाजनि ते वै पुत्रो यजस्व.....।
29. Rigveda, 1.24-30.
30. Aitareya Brāhmaṇa, 7.16
31. Rigveda, 10.60.2.
32. Rigveda, 1.126.4.
    चत्वारिंश**द्दशरथस्य** शोणाः सहस्रस्याग्रे श्रेणिं नयन्ति ।

मदच्युतः कृशनावतो अत्यान्कक्षीवन्त उदमृक्षन्त पज्राः ॥

33. Rigveda, 7.18, 7.33, 7.83 & 3.53.
34. Rigveda, 6.27.
35. Rigveda, 4.15.
36. Rigveda, 1.100 & 9.98.
37. Nirukta, 2.10.
    तम् उवाच देवापिः। अन्तरा क्षान्तं भवति । देवापिः च आर्ष्टिषेणः शंतनुः च कौरव्यौ भ्रातरौ बभूवतुः। सः शंतनुः कनीयान् अभिषेचयां चक्रे । देवापिः तपः प्रतिपेदे। ततः शंतनोः राज्ये द्वादश वर्षाणि देवः न ववर्ष। तम् ऊचुः ब्राह्मणाः। अधर्मः त्वया चरितः। तस्य एषा भवति। तस्य एतत् वर्षकामसूक्तम्। पुरोहितः ते असानि। सः शंतनुः देवापिं शिशिक्ष राज्येन । तस्मात् ते देवः न वर्षति इति। ज्येष्ठं भ्रातरम् अन्तरित्य अभिषेचितम्। समुनत्ति इति वा। तयोः विभागः। याजयानि च त्वा इति। ह्रियते जनात् जनम् इति वा। तत्र इतिहासम् आचक्षते।
38. Rigveda 10.98.
    बृहस्पते प्रति मे देवतामिहि मित्रो वा यद्वरुणो वासि पूषा।
    आदित्यैर्वा यद्वसुभिर्मरुत्वान्स पर्जन्यं शंतनवे वृषाय॥
    आ देवो दूतो अजिरश्चिकित्वान्त्वद्देवापे अभि मामगच्छत्।
    प्रतीचीनः प्रति मामा ववृत्स्व दधामि ते द्युमतीं वाचमासन्॥
    अस्मे धेहि द्युमतीं वाचमासन्बृहस्पते अनमीवामिषिराम्।
    यया वृष्टिं शंतनवे वनाव दिवो द्रप्सो मधुमाँ आ विवेश॥
    आ नो द्रप्सा मधुमन्तो विशन्त्विन्द्र देह्यधिरथं सहस्रम्।
    नि षीद होत्रमृतुथा यजस्व देवान्देवापे हविषा सपर्य॥
    आर्ष्टिषेणो होत्रमृषिर्निषीदन्देवापिर्देवसुमतिं चिकित्वान् ।
    स उत्तरस्मादधरं समुद्रमपो दिव्या असृजद्वर्ष्या अभि॥
    अस्मिन्समुद्रे अध्युत्तरस्मिन्नापो देवेभिर्निवृता अतिष्ठन् ।
    ता अद्रवन्नार्ष्टिषेणेन सृष्टा देवापिना प्रेषिता मृक्षिणीषु॥
    यद्देवापिः शंतनवे पुरोहितो होत्राय वृतः कृपयन्नदीधेत् ।
    देवश्रुतं वृष्टिवनिं रराणो बृहस्पतिर्वाचमस्मा अयच्छत्॥
    यं त्वा देवापिः शुशुचानो अग्न आर्ष्टिषेणो मनुष्यः समीधे ।
    विश्वेभिर्देवैरनुमद्यमानः प्र पर्जन्यमीरया वृष्टिमन्तम्॥
39. Mahābhārata, 1.94.
40. Mahābhārata, Aśvamedha Parva, 94, 32-33.
41. Matsya Purāṇa, 195.11-14.
42. Mahābhārata, 3.116.
43. Rigveda, 10.123.

44. Rigveda, 10.93.14.
45. Vāyu Purāṇa, 72.15-16.
46. Matsya Purāṇa, 195.17.
47. Matsya Purāṇa, 145.98-100.
48. Brahmanda Purāṇa, Madhyabhāga, 1st Adhyāya, 101-112.
49. Aitareya Brāhmaṇa, 7.3.
50. Mahābhārata, 12.90.
51. Rigveda, 1.80.16, 1.84.13-14, 1.116.12, 1.117.22, 1.139.9 & 9.108.4.
52. Bhāgavata Purāṇa, 9.21.21.
53. Mahābhārata, 12.93.
54. Aitareya Brāhmaṇa, 8.21 and Śatapatha Brāhmaṇa, 8.5.4.
55. Aitareya Brāhmaṇa, 7.18 and Śāṅkhāyana Śrutasūtra, 15.26.
56. Matsya Purāṇa, 202nd Adhyāya.
57. Matsya Purāṇa, 202.12-13.
58. Markandeya Purāṇa, 49.23-24.
59. Matsya Purāṇa, 202.10-11.
60. Matsya Purāṇa, 202.8-9.
61. Markandeya Purāṇa, 49.24.
62. Yajurveda, 10.90.
63. Aitareya Brāhmaṇa, 2.23.
64. Atharvaveda, 3.10.
65. Atharvaveda, 19.7-8.
66. Atharvaveda, 20.127-136.
67. Atharvaveda, 20.127.3.
68. Atharvaveda, 20.127.7-10.
69. Atharvaveda, 20.128.12.
70. Atharvaveda, 20.127-132.
71. Aitareya Brāhmaṇa, 30.7.
72. Atharvaveda, 5.22.
73. Paippalāda Saṁhitā, 13.1.12.
74. Rigveda, 1.164.43-44.
75. Rigveda, 10.161.
    मुञ्चामि त्वा हविषा जीवनाय कमज्ञातयक्ष्मादुत राजयक्ष्मात् ।
    ग्राहिर्जग्राह यदि वैतदेनं तस्या इन्द्राग्नी प्र मुमुक्तमेनम् ॥

यदि क्षितायुर्यदि वा परेतो यदि मृत्योरन्तिकं नीत एव ।
तमा हरामि निरृतेरुपस्थादस्पार्शमेनं शतशारदाय॥
सहस्राक्षेण शतशारदेन शतायुषा हविषाहार्षमेनम् ।
शतं यथेमं शरदो नयातीन्द्रो विश्वस्य दुरितस्य पारम्॥
शतं जीव शरदो वर्धमानः शतं हेमन्ताञ्छतमु वसन्तान् ।
शतमिन्द्राग्नी सविता बृहस्पतिः शतायुषा हविषेमं पुनर्दुः॥
आहार्षं त्वाविदं त्वा पुनरागाः पुनर्नव ।
सर्वाङ्ग सर्वं ते चक्षुः सर्वमायुश्च तेऽविदम्॥

76. Mahābhārata, Vana Parva, 219th Adhyāya.

Chapter 4

1. Rigveda, 10.129 & 10.90.
2. Brahmanda Purāṇa, 1.35.116-125.
3. Cḥāndogya Upaniṣad, 3.16.7 and Jaiminīya Upaniṣad, 4.2.11.
   एतद्ध स्म वै तद्विद्वानाह महिदास ऐतरेयः स किं म एतदुपतपसि योऽहमनेन न प्रेष्यामीति स ह षोडशं वर्षशतमजीवत्प्र ह षोडशं वर्षशतं जीवति य एवं वेद॥
4. Aitareya Brāhmaṇa, 6.5.27.
5. Aitareya Brāhmaṇa, 8.14.
6. Aitareya Brāhmaṇa, 8.21-23.
7. Aitareya Brāhmaṇa, 7.34.
8. Aitareya Brāhmaṇa, 3.3.
   कलिः शयानो भवति संजिहानस्तु द्वापरः।
   उत्तिष्ठस्त्रेता भवति कृतं संपाद्यते चरंष्चरैवेति॥
9. Śāṅkhāyana Āraṇyaka, 15th Adhyāya.
10. Kauṣītakī Brāhmaṇa, 19.3.
    स वै माघस्यामावास्यायामुपवसत्युदङ्गावर्त्स्यन्नुपेमे वसन्ति प्रायणीयेणातिरात्रेण
11. Śatapatha Brāhmaṇa, 4th Brāhmaṇa
12. Śatapatha Brāhmaṇa 13.9.3.1
13. Śatapatha Brāhmaṇa 2.1.2.3
    एता ह वै प्राच्यै दिशो न च्यवन्ते सर्वाणि ह वा अन्यानि नक्षत्राणि प्राच्यै दिशश्च्यवन्ते तत्प्राच्यामेवास्यैतद्दिश्याहितौ भवतस्तस्मात्कृत्तिकास्वादधीत.....
14. Śatapatha Brāhmaṇa, 2.1.2.4. (*Amī hyuttarā hi Saptarṣayaḥ udayanti purā etāḥ…*)
15. Śatapatha Brāhmaṇa, 11.1.1.7.

16. Kaushitaki Brāhmaṇa 5.1 & Śatapatha Brāhmaṇa 6.2.2.18
फल्गुन्यां पौर्णमास्यां प्रयुङ्क्ते मुखं वा एतत् संवत्सरस्य यत् फाल्गुनी पौर्णमासी मुखम् उत्तरे फल्गू पुच्छम्...... (Kaushitaki Brāhmaṇa)
तद्वै फाल्गुन्यामेव एषा ह संवत्सरस्य प्रथमा रात्रिर्यत् फाल्गुनी पौर्णमासी योत्तरैषोत्तमा या पूर्वा मुखत एव तत्संवत्सरमारभते .... (Śatapatha Brāhmaṇa)
17. "The Sun's Orbit in Brāhmaṇas" by Dr. Subhash Kak, Indian Journal of History of Science, 33(3), 1998, pp. 175-191.
18. Śatapatha Brāhmaṇa, 10.4.3.14-20.
19. "The Sun's Orbit in Brāhmaṇas" by Dr. Subhash Kak, Indian Journal of History of Science, 33(3), 1998, pp. 175-191.
20. "On Pre-Siddhantic evolution of the Indian Calendar" by KD Abhyankar, Astronomical Society of India, 1998, 26, pp. 67-74.
21. Pañchasiddhāntikā of Varāhamihira, translated by G Thibhut and Sudhakara Dvivedi, 1889, Introduction, pp. XXVI.
श्रीषेणविष्णुचन्द्रप्रद्युम्नार्यभटलालसिंहानां । 1
ग्रहणादिविसंवादात् प्रतिदिवसं सिद्धमज्ञत्वम् । 2
युक्त्यार्यभटोक्तानि प्रत्येकं दूषणानि योज्यानि । 3
श्रीषेणप्रभृतीनां क्वानिचिदन्यानि वक्ष्यामि । 4
आर्यात्सुर्यशशाङ्को मध्याविन्दूच्चचन्द्रपातो च । 5
कुजबुधशीघ्रबृहस्पतिसितशीघ्रनिश्चरान् मध्यान् । 6
युगयातवर्षे भगणान् वासिष्ठान् विजयनन्दिकृतपादान् । 7
मन्दोच्चपरिधिपातान् दृष्टीकरणादार्यभटात् । 8
श्रीषेणेन गृहीत्वा रक्षोच्चरारोमककृतकर्थः । 9
एतानेव गृहीत्वा वासिष्ठो विष्णुचन्द्रेण । 10
From the fact that Srishena, Vishnuchandra, Pradyumna, Aryabhata, Lata and Simha contradict one another regarding eclipses and similar topics, their ignorance is proved daily. The criticisms which I (in the preceding part of the chapter) have passed on Aryabhata are, with the requisite modifications, to be applied to the doctrines of each of those teachers as well. I will however make some further critical remarks on Srishena and others.
Srishena took from Lata the rules concerning the mean motions of the sun and moon, the moon's apogee and her node, and the mean motions of Mars, Mercury's Sighra, Jupiter, Venus's Sighra and Saturn; from -- the elapsed years and revolutions of the yuga; from Aryabhata the rules concerning the

apogees, epicycles and nodes, and these referring to the true motions of the planets; and thus---'

Here we are confronted by the latter half of line 9, which seems to state that thus the Romaka (Siddhanta) was composed (kritaḥ) by Srishena. But this would leave unexplained the last word of the line which three Manuscripts give in the form 'kanthā'. Keeping therefore this latter reading, and substituting (with the Berlin and Bom. MSS.), 'ratnochchayo' for the four aksharas preceding 'Romakah'. I translate 'and thus the Romaka (Siddhanta) which was (or 'is') a heap of jewels (as it were) has, by Srishena, been made into a patched rag (as it were).'

22. Pañchasiddhāntikā, 1.3.

23. Taittirīya Saṁhitā, 4.4.10.1-3.

कृत्तिका नक्षत्रम् अग्निर्देवताऽग्ने रुचः स्थ प्रजापतेर्धातुः सोमस्यर्चे त्वा रुचे त्वा द्युते त्वा भासे त्वा ज्योतिषे त्वा रोहिणी नक्षत्रम् प्रजापतिर्देवता मृगशीर्षं नक्षत्रम् सोमो देवताऽऽर्द्रा नक्षत्रम् रुद्रो देवता पुनर्वसू नक्षत्रम् अदितिर्देवता तिष्यो नक्षत्रम् बृहस्पतिर्देवताऽऽश्रेषा नक्षत्रम सर्पा देवता मघा नक्षत्रम् पितरो देवता फल्गुनी नक्षत्रम् ।1।

अर्यमा देवता फल्गुनी नक्षत्रम् भगो देवता हस्तो नक्षत्रं सविता देवता चित्रा नक्षत्रम् इन्द्रो देवता स्वाती नक्षत्रं वार्युदेवता विशाखे नक्षत्रम् इन्द्राग्नी देवता अनूराधा नक्षत्रम् मित्रो देवता रोहिणी नक्षत्रम् इन्द्रो देवता विचृतौ नक्षत्रम् पितरो देवताऽषाढा नक्षत्रम् आपो देवताऽषाढा नक्षत्रं विश्वे देवा देवता श्रोणा नक्षत्रंर् विर्ष्णुदेवता श्रविष्ठा नक्षत्रं वसवः ।2।

देवता शतभिषङ् नक्षत्रम् इन्द्रो देवता प्रोष्ठपदा नक्षत्रम् अज एकपाद् देवता प्रोष्ठपदा नक्षत्रम् अर्हिबुध्नियो देवता रेवती नक्षत्रम् पूषा देवताऽश्वयुजौ नक्षत्रम् अश्विनौ देवताऽपभरर्णीनक्षत्रं यमो देवता पूर्णा पश्चाद् यत् ते देवा अदधुः ।3।

24. Taittirīya Saṁhitā, 4.4.11.1.

मधुश् च माधवश् च वासन्तिकाव् ऋतू शुक्रश् च शुचिश् च ग्रीष्माव् ऋतू नभश् च नभस्यश् च वार्षिकाव् ऋतू इषश् चोर्जश् च शारदाव् ऋतू सहश् च सहस्यश् च हैमन्तिकाव् ऋतू तपश् च तपस्यश् च शैशिराव् ऋतू अग्नेर्अन्तःश्लेषो ऽसि कल्पेतां द्यावापृथिवी कल्पन्ताम् आप ओषधीः कल्पन्ताम् अग्नयः पृथङ् मम ज्यैष्ठ्याय सव्रताः ।1।

25. Taittirīya Saṁhitā, 7.5.6.1.

षडहैर्मासान्त् सम्पाद्याहर्उत् सृजन्ति षडहैर्हि मासान्त् सम्पश्यन्ति। अर्धमासैर्मासान्त् सम्पाद्यार्हउत् सृजन्ति। अर्धमासैहि मासान्त् सम्पश्यन्ति। अमावास्यया मासान्त् सम्पाद्यार्हउत् सृजन्ति। अमावास्यया हि मासान्त् सम्पश्यन्ति पौर्णमास्या मासान्त् सम्पाद्यार्हउत् सृजन्ति पौर्णमास्या हि मासान्त् सम्पश्यन्ति यो वै पूर्ण आसिञ्चति परा स सिञ्चति यः पूर्णाद् उदचति ।1।

26. Taittirīya Saṁhitā, 5.3.9.
    सर्वाभ्यो वै देवताभ्योऽग्निश् चीयते यत् सयुजो नोपदध्याद् देवता अस्याग्निं वृञ्जीरन् यत् सयुज उपदधात्य् आत्मनैवैनम् सयुजं चिनुते नाग्निना व्यृध्यते। अथो यथा पुरुषः स्नावभिः संतत एवम् एवैताभिर् अग्निः संततः। अग्निना वै देवाः सुवर्गं लोकम् आयन् ता अमूः कृत्तिका अभवन् यस्यैता उपधीयन्ते सुवर्गम् एव ।1 ।
27. Taittirīya Brāhmaṇa, 1.5.1, 3.1.1-2 & 3.1.4-5.
28. Taittirīya Brāhmaṇa, 1.5.2.6-7.
    देवगृहा वै नक्षत्राणि। य एवं वेद । गृह्य् एव भवति । यानि वा इमानि पृथिव्याष् चित्राणि। तानि नक्षत्राणि। तस्माद् अश्लीलनामम्श् चित्रे। न आवस्येन् न यजेत। यथा पापाहे कुरुते। तादृग् एव तत् । देवनक्षत्राणि वा अन्यानि ।6 ।
    यमनक्षत्राणि अन्यानि। कृत्तिकाः प्रथमम्। विशाखे उत्तमम्। तानि देवनक्ष त्राणि। अनूराधाः प्रथमम्। अपभरणीर्उत्तमम्। तानि यमनक्षत्राणि। यानि देवनक्षत्राणि। तानि दक्षिणेन परियन्ति। यानि यमनक्षत्राणि ।7 ।
29. Taittirīya Brāhmaṇa, 1.5.2.3-4.
    अभिजित् नाम नक्षत्रम्। उपरिष्टाद् आषाढानाम्। अवस्तात् श्रोणायै। देवासुराः संयत्ता आसन्। ते देवास् तस्मिन् नक्षत्रेऽभ्यजयन् ।3 ।
    यद् अभ्यजयन्। तद् अभिजितो ऽभिजित्त्वम्। यं कामयेत अनपजय्यं जयेद् इति। तम् एतस्मिन् नक्षत्रे याजयेत्। अनपजय्यम् एव जयति। पापपराजितम् इव तु । प्रजापतिः पशून् असृजत। ते नक्षत्रं नक्षत्रम् उपातिष्ठन्त। ते समावन्त एव अभवन्। ते रेवतीम् उपातिष्ठन्त ।4 ।
30. Taittirīya Brāhmaṇa, 3.1.4.7.
    देवासुराः संयत्ता आसन्न्। ते देवाः सर्पेभ्य आश्रेषाभ्य आज्ये करम्भं निरवपन्न्। तानेताभिरेव देवताभिरुपानयन् । एताभिर्ह वै देवताभिर्द्विषन्तं भ्रातृव्यमुपनयति य एतेन हविषा यजते। य उ चैनदेवं वेद। सोऽत्र जुहोति। सर्पेभ्यः स्वाहा श्रेषाभ्यः स्वाहा। दन्दशूकेभ्यः स्वाहेति।
31. Taittirīya Kāṭhakam, 1.4.1.
    संवत्सरोऽसि परिवत्सरोऽसि। इदावत्सरोऽसीदुद्वत्सरोऽसि। इद्वत्सरोऽसि वत्सरोऽसि। तस्य ते वसन्तः शिरः। ग्रीष्मो दक्षिणः पक्षः। वर्षाः पुच्छम्। शरदुत्तरः पक्षः। हेमन्तो मध्यम्। पूर्वपक्षाश्चितयः। अपरपक्षाः पुरीषम्।
32. Taittirīya Kāṭhakam, 1.9.
33. Taittirīya Āraṇyaka, 1.9.2.
    याश्च वासुकिवैद्युताः। रजताः परुषाः श्यामाः। कपिला अतिलोहिताः। ऊर्ध्वा अवपतन्ताश्च। वैद्युत इत्येकादश, इति। नैनं वैद्युतो हिनस्ति। य एवं वेद, इति। स होवाच व्यासः पाराशर्यः। विद्युद्वधमेवाहं मृत्युमैच्छमिति, इति। न त्वकाँ हन्ति ।।
34. Kāthaka Saṁhitā, 10.6.

नैमिष्या वै सत्रमासत त उत्थाय सप्तविंशतिं कुरुपञ्चालेषु वत्सतरानवन्वत तान्वको दाल्भिरब्रवीद्यूयमेवैतान् विभजध्वमिममहं धृतराष्ट्रं वैचित्रवीर्यं गमिष्यामि स मह्यं गृहान् करिष्यतीति तमागच्छत् तन्नासूर्क्षत् तं प्राकालयतैता गा ब्रह्मबन्ध इत्यब्रवीत् पशुपतिर्गा हन्ति ताः परः पचमानश्चरेति तासां देवसूर्मे राजान्नं प्रासुपोदिति सक्थान्युत्कर्तमपचत तस्मिन् पचमाने व्युदस्यत् सोऽग्नये रुद्रवतेऽष्टाकपालं निरवपत् कृष्णानां व्रीहीणां तस्य यत् किंच धृतराष्ट्रस्यासीत् तत् सर्वमवकर्णं विद्राणमभिव्यौच्छत् ता विप्रश्निका अविन्दन् ब्राह्मणो वै त्वायमभिचरति तस्मिनाथस्वेति तमुपाशिक्षत् तस्मै बह्वददात् सोऽग्नये सुरभिमतेऽष्टाकपालं निरवपच्छुक्लानां व्रीहीणां ततो वै तद्व्युदस्यदग्नये रुद्रवतेऽष्टाकपालं निर्वपेत् कृष्णानां व्रीहीणामभिचरन्नग्निर्वै रुद्रो रुद्रायैवैनम पिदधाति कृष्णानां व्रीहीणां भवति..... ।

35. Śatapatha Brāhmaṇa, 13.5.4.22.
36. Atharvaveda, 8.10.29.
37. Pañchaviṁśa Brāhmaṇa, 25.15.3.

    अतिरात्रावभितोऽग्निष्टोमा मध्ये सर्वो दशदशी संवत्सरो द्वादशो विषुवान् सर्पसामानि विषुवति क्रियन्ते एतेन वै सर्पा एषु लोकेषु प्रत्यतिष्ठन्नेषु लोकेषु प्रतितिष्ठन्ति य एतदुपयन्ति जर्वरो गृहपतिः धृतराष्ट्र ऐरावतो ब्रह्मा पृथुश्रवा दौरेश्रवस उद्गाता ग्लावश्चाजगावश्च प्रस्तोतृप्रतिहर्तारौ दत्तस्तापसो होता शितिपृष्ठो मैत्रावरुणः तक्षको वैशालेयो ब्राह्मणाच्छंसी शिखानुशिखौ नेष्टापोतारौ अरुण आटोच्छावाकः तिमिर्घो दौरेश्रुतोऽग्नीत् कौतस्तावध्वर्यू अरिमेजयश्च जनमेजयश्चार्बुदो ग्रावस्तुदजिरः सुब्रह्मण्यश्च कपिशङ्गावुन्नेतारौ शण्डकुषण्डावभिगरापगरौ एतेन वै सर्पा अपमृत्युमजयन्नपमृत्युं जयन्ति य एतदुपयन्ति तस्मात् ते हित्वा जीर्णां त्वचमतिसर्पन्त्यप हि ते मृत्युमजयन् सर्पा वा आदित्या आदित्यानामिवैषां प्रकाशो भवति य एतदुपयन्ति ॥

38. Kapiṣṭhala Saṁhitā, 3.5.
39. Kapiṣṭhala Saṁhitā, 6.6.

    दिशो वै नाकल्पयन्त न प्राज्ञायन्त। तत एतामग्नये प्राचीं दिशमरोचयन् यत्कृत्तिकाः। यत्कृत्तिकास्वग्निमाधत्ते प्राच्यामेवैनं दिश्याधत्ते ।

40. Kapiṣṭhala Saṁhitā, 6.6.

    फल्गुनीपूर्णमास आधेयः। एतद्वा ऋतूनां मुखम्। ऋतुमुख एवैनमाधत्ते। शिशिर आधेयः।

41. Kapiṣṭhala Saṁhitā, 8.3.
42. Kapiṣṭhala Saṁhitā, 8.4.
43. Maitrāyaṇī Saṁhitā, 1.6.9.

    फल्गुनीपूर्णमासे ब्राह्मणस्यादध्यात्, फल्गुनीपूर्णमासो वा ऋतूनां मुखम्, अग्निर्देवतानां, ब्राह्मणो मनुष्याणां, ग्रीष्मे राजन्यस्यादध्यात्, ग्रीष्मे वा इन्द्रो वृत्रमहन्, वृत्रं खलु वै राजन्यो बुभूषन् जिघांसति, शरदि वैश्यस्यादध्यात्,

अन्नं वै शरत्, अन्नेन वैश्यो भद्रो भवति, अन्नाद्यमस्मा अवरुन्द्धे, यद्यन्यस्मिन्न् ऋता आदधीत यदि वा अस्मै स एक ऋतुः शिवः स्यादथास्मा इतरेऽशिवा दुर्योणा भवेयुस्तद्यस्येर्त्सेत् फल्गुनीपूर्णमास एव तस्यादध्यात्, तदस्मै सर्व ऋतवः शिवा भवन्ति, सर्व एनं ऋतवो जिन्वन्ति, संवत्सरस्य वा एतदास्यं यत् फल्गुनी पूर्णमास्यमर्हयत् फल्गुनीपूर्णमास्यमहरादध्यात् संवत्सरस्यैनं आसन्नपिदध्यात्, द्व्यहे वा पुरैकाहे वाधेय,स्तद् द्वितीयस्य ऋतोरभिगृह्णाति, नैनं संवत्सरस्यासन्नपिदधाति, तद्यद् द्वितीयस्य ऋतोरभिगृह्णाति द्वितीयमेव सपत्नस्य भ्रातृव्यस्येन्द्रियं पशून् क्षेत्रं वृञ्जान एति, कृत्तिकासु ब्राह्मणस्यादध्यात्, आग्नेयीः कृत्तिका, आग्नेयो ब्राह्मण, स्व एवैनं योनौ स्वेऽहन्नाधत्ते, प्रजापतेर्वा एतं शिरो यत् कृत्तिका, अग्निरास्यम्, शीर्णा न्नमद्यते, अन्नाद्यमस्मा अवरुन्द्धे, सप्त कृत्तिकाः, सप्त शीर्षन् प्राणाः, प्राणानस्मिन् दधाति, रोहिण्यां पशुकामस्यादध्यात्, सोमस्य वा एतन् नक्षत्रं यद् रोहिणी, सोमो रेतोधा, रेतोऽस्मिन् दधाति, ऋक्षा वा इयमग्र आसीत्, तस्यां देवा रोहिण्यां वीरुधोऽरोहयन्, तद्यथेमा अस्यां वीरुधो रूढा एवमस्मिन् पशवो रोहन्ति य एवं विद्वान् रोहिण्यामग्नि माधत्ते, रोहिण्यां स्वर्गकामस्यादध्यात्, रोहिण्यां वै देवाः स्वरायन्, त्स्वरेवैति, कालकाञ्जा वा असुरा इष्टका अचिन्वत, दिवमारोक्ष्यामा, इति तानिन्द्रो ब्राह्मणो ब्रुवाण उपैत्, स एतामिष्टकामप्युपाधत्त, प्रथमा इव दिवमाक्रमन्त, अथ स ताम् आबृहत्, तेऽसुराः पापीयांसो भवन्तोऽपाभ्रंशन्त, या उत्तमा आस्तां तौ यमश्वा अभवताम्, येऽधरे त ऊर्णावाभयो, यां तामिष्टकामाबृहत् सा चित्राभवत्, यः सपत्नवान् भ्रातृव्यवान् वा स्यात्स चित्रायामग्निम् आदधीत, तद्यथैतस्यामावृढायामसुराः पापीयांसो भवन्तोऽपाभ्रंशन्तैवमस्य सपत्नो भ्रातृव्यः पापीयान् भवन्नपभ्रंशते य एवं विद्वांश्चित्रायामग्निमाधत्ते, यः कामयेत, भग्यन्नादः स्यां इति, स पूर्वासु फल्गुनीष्वग्निम् आदधीत, भगस्य वा एतदहर्यत् पूर्वाः फल्गुनी, भर्ग्यन्नादो भवति, अथ यः कामयेत दानकामा मे प्रजाः स्युरिति, स उत्तरासु फल्गुनीष्वग्निम् आदधीत, अर्यम्णो वा एतदहर्यदुत्तराः फल्गुनी, दानं अर्यमा, दानकामा अस्मै प्रजा भवन्ति, तासु राजन्यस्यादध्यात्, दानं ह्येष प्रजानां उपजीवति, दानं अर्यमा, दानकामा अस्मै प्रजा भवन्ति, प्रजापतेर्वा एतौ स्तनौ यत् पौर्णमासी चामावास्या च, यत् पौर्णमास्यां वामावास्यायां वाग्निमाधत्ते प्रजापतिमेव प्रत्तं दुहे, देवानां वा एते सदोहविर्धाने यत् पौर्णमासी चामावास्या च, यत् पौर्णमास्यां वामावास्यायां वाग्निमाधत्ते उभे पुण्याहे उभे यज्ञिये।।

44. Maitrāyaṇī Upaniṣad, 6.14.
45. Maitrāyaṇī Upaniṣad, 1.7.
46. Jaiminīya Brāhmaṇa, 2.112 and Śatapata Brāhmaṇa, 6.1.2.25.
    अथ ह स्माह ताण्ड्यः। क्षत्रं वै यजुष्मत्य इष्टका विशो लोकम्पृणा अत्ता वै क्षत्रियोऽन्नं विड्यत्र वा अत्तुरन्न भूयो भवति तद्राष्ट्रं समृद्धं भवति तदेधते तस्माल्लोकम्पृणा एव भूयसीरुपदध्यादित्येतदु ह तयोर्वचोऽन्या त्वेवात स्थितिः।
47. Pañchaviṁśa Brāhmaṇa, (16.8.6)
    यावद्वै सहस्रं गाव उत्तराधरा इत्याहुस्तावदस्मात् लोकात् स्वर्गो लोक इति ।

48. The world of heaven is as far removed from this world, they say, as a thousand earths stacked one above the other.
49. Pañchaviṁśa Brāhmaṇa, 8.2.10.
प्रजापतिरुषसमध्यैत् स्वां दुहितरं तस्य रेतः परापतत् तदस्यां न्यषिच्यत तदश्रीणादिदं मे मा दुषदिति तत् सदकरोत् पशूनेव यच्छ्रायन्तीयं ब्रह्मसाम भवति श्रीणाति चैवेनं सच्च करोति ।
50. Ṣaḍviṁśa Brāhmaṇa, 2.5.6.
51. Pañchaviṁśa Brāhmaṇa, 25.10.10.
52. Ṣaḍviṁśa Brāhmaṇa
या पूर्वा पौर्णमासी सानुमति योत्तरा सा राका या पूर्वामावास्या सा सिनीवली योत्तरा सा कुहूर्योनुपश्यन्त्यन्त्यं न पश्यति तन्मिथुनमेवास्य भवति पुष्ये चानुमतिर्ज्ञेया सिनीवली तु द्वापरे खार्वायां तु भवेद्राका कृतपर्वे कुहूर्भवेद् ।
53. Rigveda, 2.32.7-8, 10.184.
54. Pañchaviṁśa Brāhmaṇa, 25.10.
सरस्वत्या विनशने दीक्षन्ते ।1। सरस्वती नाम नदी प्रत्यक्श्रोता प्रवहति तस्याः प्रागपरभागौ सर्वलोकप्रत्यक्षौ मध्यमस्तु भागो भुम्यामन्तर्निमग्नः प्रवहति नासौ केनचिद् दृश्यते तद्विनशनमित्युच्यते तस्योपक्रमे दक्षिणे तीरे दीक्षन्ते।
55. Pañchaviṁśa Brāhmaṇa, 25.10.11.
सरस्वत्या वै देवा आदित्यमस्तभ्नुवन् सा नायच्छत् साभ्यव्लीयत तस्मात् सा कुब्जिमतीव तं बृहत्यास्तभ्नुवन् सायच्छत् तस्माद्बृहती छन्दसां वीर्यवत्तमादित्यं हि तयास्तभ्नुवन् ।
56. Rigveda, 6.61.10.
इयमददाद्रभसमृणच्युतं दिवोदासं वध्र्यश्वाय दाशुषे ।
या शश्वन्तमाचखादावसं पणिं ता ते दात्राणि तविषा सरस्वति॥
इयं शुष्मेभिर्बिसखा इवारुजत्सानु गिरीणां तविषेभिरूर्मिभिः ।
पारावतघ्नीमवसे सुवृक्तिभिः सरस्वतीमा विवासेम धीतिभिः ॥
सरस्वति देवनिदो नि बर्हय प्रजां विष्वस्य बृसयस्य मायिनः ।
उत क्षितिभ्योऽवनीरविन्दो विषमेभ्यो अस्रवो वाजिनीवति॥
प्र णो देवी सरस्वती वाजेभिर्वाजिनीवती।
धीनामवि़न्र्यवतु ॥
यस्त्वा देवि सरस्वत्युपब्रुते धने हिते।
इन्द्रं न वृत्रतूर्ये ॥
त्वं देवि सरस्वत्यवा वाजेषु वाजिनि।
रदा पूषेव नः सनिम्॥
उत स्या नः सरस्वती घोरा हिरण्यवर्तनिः।
वृत्रघ्नी वष्टि सुष्टुतिम्॥

यस्या अनन्तो अह्रुतस्त्वेषश्चरिष्णुरर्णवः।
अमश्चरति रोरुवत्॥
सा नो विश्वा अति द्विषः स्वसोरन्या ऋतावरी।
अतन्नहेव सूर्यः॥
उत नः प्रिया प्रियासु सप्तस्वसा सुजुष्टा।
सरस्वती स्तोम्या भूत्॥

57. Pañchaviṁśa Brāhmaṇa, 25.10.23.
कारपचवं प्रति यमुनामवभृथमभ्यवयन्ति ।
58. Rigveda, 10.48.9.
प्र मे नमी साप्य इषे भुजे भूद्गवामेषे सख्या कृणुत द्विता ।
दिद्युं यदस्य समिथेषु मंहयमादिदेनं शंस्यमुक्थ्यं करम्॥
59. Pañchaviṁśa Brāhmaṇa, 25.10.17.
एतेन वै नमी साप्यो वैदेहो राजाञ्जसा स्वर्गं लोकमैदञ्जसागामेति तदञ्जस्कीयानामञ्जस्कीयत्वम्।
60. Lātyāyana Śrautasūtra, 15.1, 17.1-19 and 19.1-15.
61. Pañchaviṁśa Brāhmaṇa, 25.10.
चतुश्चत्वारिंशदाश्वीनानि सरस्वत्या विनशनात् प्लक्षः प्रास्रवणस्तावदितः स्वर्गो लोकः सरस्वतीसम्मितेनाध्वना स्वर्गं लोकं यन्ति ।16। सरस्वतीविनशनप्रदेशादारभ्य गतां चतुश्चत्वारिम्शदाश्वीनः प्रमाणप्लक्षः प्रास्रवणः एकोप्यश्व एकेनाहोरात्रेण यावन्तमध्वानं गच्छति तावानेकाश्वीनः तथाविधचतुश्चत्वारिम्शदाश्वीनैर्यावानध्‍ वा भवति प्लक्षप्रस्रवणो भवति आश्वीन इत्यस्यैकाहगताश्वीनेवा इतः स्वर्गोलोक इत्युक्तं नैष दोषः सहस्राश्विनोस्यान्तर्भावात् ।
62. Aṣṭādhyāyī, 5.2.19 (अश्वस्यैकाहगमः।).
63. Jaiminīya Brāhmaṇa, 1.19-20.
आरुणिर्वाजसनेयो वर्कुवार्ष्णः प्रियो जानश्रुतेयो बुढिल आश्वतराश्विर्वैयाघ्रपद्य इत्येते ह पञ्च महाब्रह्मा आसुः। ते होर्चुजनको वा अयं वैदेहो अग्निहोत्रे अनुशिष्टः स नो अतिवदन् इव मन्यते । तम् अग्निहोत्रे कथां वादयिष्याम इति।
64. Jaiminīya Brāhmaṇa, 1.151.
पौरुमीढम् दक्षोणिधनम् आयुष्कामः कुर्वीत तरन्तपुरुमीढौ वै वैतदश्वी माहेयौ मह्या आर्चनानस्यै पुत्रौ ।
65. Bhāgavata Purāṇa, 12.7.
66. Aitareya Brāhmaṇa, 3.32.
67. Cḥāndogya Upaniṣad, 3.16.7.
68. Cḥāndogya Upaniṣad, 7.1.1.
69. Cḥāndogya Upaniṣad, 7.26.2.

तदेष श्लोको न पश्यो मृत्युं पश्यति न रोगं नोत दुःखताँ सर्वँ ह पश्यः पश्यति सर्वमाप्नोति सर्वश इति। स एकधा भवति त्रिधा भवति पञ्चधा सप्तधा नवधा चौव पुनश्चैकादशः स्मृतः शतं च दश चैकश्च सहस्राणि च विँशतिराहारशुद्धौ सत्त्वशुद्धौ ध्रुवा स्मृतिः स्मृतिलम्भे सर्वग्रन्थीनां विप्रमोक्षस्तस्मै मृदितकषायाय तमसस्पारं दर्शयति भगवान्सनत्कुमारस्तँ स्कन्द इत्याचक्षते तँ स्कन्द इत्याचक्षते।

70. Chāndogya Upaniṣad, 7.1.1-4.
    अधीहि भगव इति होपससाद सनत्कुमारं नारदस्तँ होवाच यद्वेत्थ तेन मोपसीद ततस्त ऊर्ध्वं वक्ष्यामीति स होवाच ।1।
    ऋग्वेदं भगवोऽध्येमि यजुर्वेदँ सामवेदमाथर्वणं चतुर्थमितिहासपुराणं पञ्चमं वेदानां वेदं पित्र्यँ राशिं दैवं निधिं वाकोवाक्यमेकायनं देवविद्यां ब्रह्मविद्यां भूतविद्यां क्षत्रविद्यां नक्षत्रविद्याँ सर्पदेवजनविद्यामेतद्भगवोऽध्येमि ।2।
    सोऽहं भगवो मन्त्रविदेवास्मि नात्मविच्छ्रुतँ ह्येव मे भगवद्दृशेभ्यस्तरति शोकमात्मविदिति सोऽहं भगवः शोचामि तं मा भगवाञ्छोकस्य पारं तारयत्विति तँ होवाच यद्वै किञ्चैतदध्यगीष्ठा नामैवैतत् ।3।
    नाम वा ऋग्वेदो यजुर्वेदः सामवेद आथर्वणश्चतुर्थ इतिहासपुराणः पञ्चमो वेदानां वेदः पित्र्यो राशिर्दैवो निधिर्वाकोवाक्यमेकायनं देवविद्या ब्रह्मविद्या भूतविद्या क्षत्रविद्या नक्षत्रविद्या सर्पदेवजनविद्या नामैवैतन्नामोपास्स्वेति ।4।
71. Sāmavidhāna Brāhmaṇa, 3.9.
72. Sāmavidhāna Brāhmaṇa, 1.1.7.
73. Sāmavidhāna Brāhmaṇa, 1.4.19-20.
    नाम संहितैतां प्रयुञ्जन् विनायकं प्रीणयित्वा..... एषा स्कन्दस्य संहितैतां प्रयुञ्जन् स्कन्दं प्रीणाति ।
74. Sāmavidhāna Brāhmaṇa, 1.3.6.
75. Sāmavidhāna Brāhmaṇa, 2.2.
    वेदशास्त्राधिकारिणो ब्राह्मणादिर्वैवर्णिका आर्याः, तदतिरिक्ताः अनार्याः शूद्रपतितादयः....
76. Sāmavidhāna Brāhmaṇa, 3.7.
    पञ्च हास्य कार्षापणाः भवन्ति व्ययकृताश्च पुनरायन्ति.....
77. Atharvaveda, 19.7-8.
78. Atharvaveda, 6.128.1.
79. "The Orion" by Balagangadhar Tilak, pp.24.
80. Gopatha Brāhmaṇa, 1.4.18.
    अथ हैष महासुपर्णस् तस्य यान् पुरस्ताद् विषुवतः षष्मासान् उपयन्ति स दक्षिणः पक्षः अथ यान् आवृत्तान् उपरिष्टात् षड् उपयन्ति स उत्तरः पक्षः आत्मा वै संवत्सरस्य विषुवान् अङ्गानि पक्षौ यत्र वा आत्मा तत् पक्षौ यत्र वै पक्षौ

तद् आत्मा न वा आत्मा पक्षाव् अतिरिच्यते नो पक्षाव् आत्मानम् अतिरिच्येते इति एवम् उ हैव तद् अपरेषां स्विदितमह्नां परेषाम् इत्य् अपरेषां चैव परेषां चेति ब्रुयात् स वा एष संवत्सरः ।18।

81. Gopatha Brāhmaṇa, 1.5.10.
    देवा ह वै सहस्रसंवत्सराय दिदीक्षिरे। तेषां पञ्च शतानि संवत्सराणां पर्युपेतान्य् आसन्न् अथेदं सर्व शश्राम ये स्तोमा यानि पृष्ठानि यानि शस्त्राणि। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तद् अयातयाम मध्ये यज्ञस्यापश्यन। तेनायातयाम्ना या वेदे व्यर्ष्टिआसीत् तां पञ्चस्व् अपश्यन्न् ऋचि यजुषि साम्नि शान्तेऽथ घोरे। ता वा एताः पञ्च व्याहृतयो भवन्त्य् ओ श्रावयास्तु श्रौषड् यज ये यजामहे वौषड् इति। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा [एद्. दवा,। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तत एतं तापश्चितं सहस्रसंवत्सरस्याञ्जस्यम् अपश्यन। ते ह्य् एव स्तोमा भवन्ति तानि पृष्ठानि तानि शस्त्राणि। स खलु द्वादश मासान् दीक्षाभिर्एति द्वादशमासान् उपसद्भिर्द्वादशमासांत् सुत्याभिः। अथ यद् द्वादश मासान् दीक्षाभिर्एति द्वादशमासान् उपसद्भिस् तेनैताव् अग्न्यर्काव् आप्नोति। अथ यद् द्वादश मासांत् सुत्याभिस् तेनेदं महदुक्थम् अवाप्नोति। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तत एतं संवत्सरम् तापश्चितस्याञ्जस्यम् अपश्यन्। ते ह्य् एव स्तोमा भवन्ति तानि पृष्ठानि तानि शस्त्राणि। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तत एतं द्वादशाहं संवत्सरस्याञ्जस्यम् अपश्यन्। ते ह्य् एव स्तोमा भवन्ति तानि पृष्ठानि तानि शस्त्राणि। स खलु द्वादशाहं दीक्षाभिर्एति द्वादशाहम् उपसद्भिर्द्वादशाहं सुत्याभिः। अथ यद् द्वादशाहं दीक्षाभिर्एति द्वादशाहम् उपसद्भिस् तेनैताव् अग्न्यर्काव् आप्नोति। अथ यद् द्वादशाहं सुत्याभिस् तेनेदं महदुक्थम् अवाप्नोति। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा इहसमिवासुरुप। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तत एतं पृष्ठ्यं षडहं द्वादशाहस्याञ्जस्यम् अपश्यन। ते ह्य् एव स्तोमा भवन्ति तानि पृष्ठानि तानि शस्त्राणि। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। तत एतं विश्वजितं पृष्ठ्यषडहस्याञ्जस्यम् अपश्यन्। ते ह्य् एव स्तोमा भवन्ति तानि पृष्ठानि तानि शस्त्राणि। ते देवा इहसामिवासुरुप तं यज्ञक्रतुं जानीमो यः सहस्रसंवत्सरस्य प्रतिमा। को हि तस्मै मनुष्यो यः सहस्रसंवत्सरेण यजेतेति। स वा एष विश्वजिद् यः सहस्रसंवत्सरस्य प्रतिमा। एष ह प्रजानां प्रजापतिर्यद् विश्वजिद् इति ब्राह्मणम् ।10।

82. Gopatha Brāhmaṇa, 2.6.1.
ओं तान् वा एतान् संपातान् विश्वामित्रः प्रथमम् अपश्यत् (एवा त्वाम् इन्द्र वज्रिन्न् अत्र [ऋ. ४.१९.१]) (यन् न इन्द्रो जुजुषे यच् च वष्टि [ऋ. ४.२२.१]), (कथा महाम् अवृधत् कस्य होतुः [ऋ. ४.२३.१]) इति तान् विश्वामित्रेण दृष्टान् वामदेवो ऽसृजत स हेक्षां चक्रे विश्वामित्रो यान् वा अहं संपातान् अदर्श तान् वामदेवो ऽसृजत कानि न्व् अहं हि सूक्तानि संपातांस् तत् प्रतिमान्त् सृजेयम् इति स एतानि सूक्तानि संपातांस् तत् प्रतिमान् असृजत (सद्यो ह जातो वृषभः कनीनः [ऋ. ३.४८.१]), (उद् उ ब्रह्माण्य् ऐरत श्रवस्या [ऋ. ७.२३.१, शौ.सं. २०.१२.१]), (अभि तष्टेव दीधया मनीषाम् [ऋ. ३.३८.१]) इति विश्वमित्रः (इन्द्रः पूर्भिद् आतिरद् दासम् अर्कैः [ऋ. ३.३४.१, शौ.सं. २०.११.१]), (य एक इद् धव्यश् चर्षणीनाम् [ऋ. ६.२२.१, शौ.सं. २०.३६.१]), (यस् तिग्मशृङ्गो वृषभो न भीमः [ऋ. ७.१९.१, शौ.सं. २०.३७.१]) इति वसिष्ठः (इमाम् ऊ षु प्रभृतिं सातये धाः [ऋ. ३.३६.१]), (इच्छन्ति त्वा सोम्यासः सखायः [ऋ. ३.३०.१]) (शासद् वह्निर्दुहितुर्नप्त्यं गात् [ऋ. ३.३१.१]) इति भरद्वाजः एतैर्वै संपातैएत ऋषय इमांल् लोकान्त् समपतन् तद् यत् समपतंस् तस्मात् संपातास् तत् संपातानां संपातत्वम् ततो वा एतांस् त्रीन् संपातान् मैत्रावरुणो विपर्यासम् एकैकम् अहरहः शंसत्य् (एवा त्वाम् इन्द्र वज्रिन्न् अत्र [ऋ. ४.१९.१]) इति प्रथमे ऽहनि (यन् न इन्द्रो जुजुषे यच् च वष्टि [ऋ. ४.२२.१]) इति द्वितीये (कथा महाम् अवृधत् कस्य होतुः [ऋ. ४.२३.१]) इति तृतीये त्रीन् एव संपातान् ब्राह्मणाच्छंसी विपर्यासम् एकैकम् अहरहः शंसति (इन्द्रः पूर्भिद् आतिरद् दासम् अर्कैः [ऋ. ३.३४.१, शौ.सं. २०.११.१]) इति प्रथमेऽहनि (य एक इद् धव्यश् चर्षणीनाम् [ऋ. ६.२२.१, शौ.सं. २०.३६.१]) इति द्वितीये (यस् तिग्मशृङ्गो वृषभो न भीमः [ऋ. ७.१९.१, शौ.सं. २०.३७.१]) इति तृतीये त्रीन् एव संपातान् अच्छावाको विपर्यासम् एकैकम् अहरहः शंसति (इमाम् ऊ शु प्रभृतिं सातये धाः [ऋ. ३.३६.१]) इति प्रथमे ऽहनि (इच्छन्ति त्वा सोम्यासः सखायः [ऋ. ३.३०.१]) इति द्वितीये (शासद् वह्निर्दुहितुर्नप्त्यं गात् [ऋ. ३.३१.१]) इति तृतीये तानि वा एतानि नव त्रीणि चाहरहःशंस्यानि तानि द्वादश भवन्ति द्वादश ह वै मासाः संवत्सरः संवत्सरः प्रजापतिः प्रजापतिर्यज्ञस् तत् संवत्सरं प्रजापतिं यज्ञम् आप्नोति तस्मिन्त् संवत्सरे प्रजापतौ यज्ञेऽहरहः प्रतितिष्ठन्तो यन्ति प्रतितिष्ठन्ते, इदं सर्वम् अनु प्रतितिष्ठति प्रतितिष्ठति प्रजया पशुर्भिय एवं वेद तान्य् अन्तरेण ाावापम् आवपेरन् अन्यूङ्खा विराजश् चतुर्थेऽहनि वैमदीश् च पङ्क्तीः पञ्चमे पारुच्छेपीः षष्ठे अथ यान्य् अन्यानि महास्तोत्राण्य् अष्टर्चान्य् आवपेरन् ।1।

83. Gopatha Brāhmaṇa, 2.1.19.
अथातश् चातुर्मास्यानां प्रयोगः फाल्गुन्यां पौर्णमास्यां चातुर्मास्यानि प्रयुञ्जीत मुखं वा एतत् संवत्सरस्य यत् फाल्गुनी पौर्णमासी मुखम् उत्तरे फाल्गुन्यौ पुच्छं पूर्वे तद् यथा प्रवृत्तस्यान्तौ समेतौ स्याताम् एवम् एवैतत् संवत्सरस्यान्तौ समेतौ भवतस् तद् यत् फाल्गुन्यां पौर्णमास्यां चातुर्मास्यैर्यजते मुखत एवैतत् संवत्सरं प्रयुङ्क्ते अथो भैषज्ययज्ञा वा एते यच् चातुर्मास्यानि तस्माद् ऋ

तुसंधिषु प्रयुज्यन्ते ऋतुसंधिषु वै व्याधिर्जायते तान्य् एतान्य् अष्टौ हवींषि भवन्ति अष्टौ वै चतसृणां पौर्णमासीनां हवींषि भवन्ति चतसृणां वै पौर्णमासीनां वैश्वदेवं समासः अथ यद् अग्निं मन्थन्ति प्रजापतिर्वै वैश्वदेवम् प्रजात्या एव अथैतं दैवं गर्भं प्रजनयति अथ यत् सप्तदश सामिधेन्यः सप्तदशो वै प्रजापतिः प्रजापतेराप्त्यै अथ यत् सद्वन्ताव् आज्यभागाव् असिसंतीति वै सद्वन्तौ भवतः अथ यद् विराजौ संयाज्ये अन्नं वै श्रीविराड् अन्नाद्यस्य श्रियो ऽवरुद्ध्यै [एद्. ऽवरुद्ध्या ऽथ, अथ यन् नव प्रयाजा नवानुयाजा अष्टौ हवींषि वाजिनं नवमं तन् नक्षत्रीयां विराजम् आप्नोति अथो आहुर्दशनीं विराजम् इति प्रयाजानुयाजा हवींष्य् आघाराव् आज्यभागाव् इति ।19।

84. Gopatha Brāhmaṇa, 1.1.21 & 1.2.9.

    तस्य मकारश्रुत्येतिहासपुराणं वाकोवाक्यं गाथा नाराशंसीउपनिषदो ऽनुशासनानीति वृधत् करद् रुहन् महत् तच् छम् ओम् इति ।1.1.21।

    विचारी ह वै काबन्धिः कबन्धस्याथर्वणस्य पुत्रो मेधावी मीमांसको ऽनूचान आस स ह स्वेनातिमानेन मानुषं वित्तं नेयाय तं मातोवाच त एवैतद् अन्नम् अवोचंस् त इम एषु कुरुपञ्चालेष्व् अङ्गमगधेषु काशिकौशलेषु शाल्वमत्स्येषु सवशोशीनरेषूदीच्येश्व् अन्नम् अदन्तीति अथ वयं तवैवातिमानेनानाद्याः स्मः वत्स वाहनम् अन्विच्छेति स मान्धार्तुयौवनाश्वस्य सार्वभौमस्य राज्ञः सोमं प्रसूतम् आजगाम स सदो ऽनुप्रविश्यर्त्विजश् च यजमानं चामन्त्रयाम् आस तद् याः प्राच्यो नद्यो वहन्ति याश् च दक्षिणाच्यो याश् च प्रतीच्यो याश् चोदीच्यस् ताः सर्वाः पृथङ्नामधेया इत्य् आचक्षते तासां समुद्रम् अभिपद्यमानानां छिद्यते नामधेयं समुद्र इत्य् आचक्षते एवम् इमे सर्वे वेदा निर्मिताः सकल्पाः सरहस्याः सब्राह्मणाः सोपनिषत्काः सेतिहासाः सान्वाख्यानाः सपुराणाः सस्वराः ससंस्काराः सनिरुक्ताः सानुशासनाः सानुमार्जनाः सवाकोवाक्यास् तेषां यज्ञम् अभिपद्यमानानां छिद्यते नामधेयं यज्ञ इत्य् एवाचक्षते ।1.2.9।

85. Gopatha Brāhmaṇa, 1.1.10.

    स दिशोऽन्वैक्षत प्राचीं दक्षिणां प्रतीचीम् उदीचीं ध्रुवाम् ऊर्ध्वाम् इति तास् तत्रैवाभ्यश्राम्यद् अभ्यतपत् समतपत् ताभ्यः श्रान्ताभ्यस् तप्ताभ्यः संतप्ताभ्यः पञ्च वेदान् निरमिमीत सर्पवेदं पिशाचवेदम् असुरवेदम् इतिहासवेदं पुराणवेदम् इति स खलु प्राच्या एव दिशः सर्पवेदं निरमिमीत दक्षिणस्याः पिशाचवेदम् प्रतीच्या असुरवेदम् उदीच्या इतिहासवेदम् ध्रुवायाश् चोर्ध्वायाश् च पुराणवेदम् स तान् पञ्च वेदान् अभ्यश्राम्यद् अभ्यतपत् समतपत् तेभ्यः श्रान्तेभ्यस् तप्तेभ्यः संतप्तेभ्यः पञ्च महाव्याहृतीनिरमिमीत वृधत् करद् रुहन् महत् तद् इति वृधद् इति सर्पवेदात् करद् इति पिशाचवेदात् रुहद् इत्य् असुरवेदात् महद् इतीतिहासवेदात् तद् इति पुराणवेदात् स य इच्छेत् सवैर् एतैः पञ्चभिर्वेदैः कुर्वीयेत्य् एताभिएव तन् महाव्याहृतिभिः कुर्वीत सर्वेह वा अस्यैतैः पञ्चभिर्वेदैः कृतं भवति य एवं वेद यष् चौवंविद्वान् एवम् एताभिर्महाव्याहृतिभिः कुरुते ।10।

86. Gopatha Brāhmaṇa, 1.1.24.

ओंकारं पृच्छामः को धातुः किं प्रातिपदिकम् किं नामाख्यातम् किं लिङ्गम् किं वचनम् का विभक्तिः कः प्रत्ययः कः स्वर उपसर्गो निपातः किं वै व्याकरणम् को विकारः को विकारी कतिमात्रः कतिवर्णः कत्यक्षरः कतिपदः कः संयोगः किं स्थानानुप्रदानकरणं शिक्षुकाः किम् उच्चारयन्ति किं छन्दः को वर्ण इति पूर्वे प्रश्नाः अथोत्तरे मन्त्रः कल्पो ब्राह्मणम् ऋग् यजुः साम कस्माद् ब्रह्मवादिन ओंकारम् आदितः कुर्वन्ति किं दैवतम् किं ज्योतिषम् किं निरुक्तम् किं स्थानम् का प्रकृतिः किमध्यात्मम् इति षट्त्रिंशत् प्रश्नोः पूर्वोत्तराणां त्रयो वर्गा द्वादशकाः एतैर्ओंकारं व्याख्यास्यामः ।24 ।

87. Gopatha Brāhmaṇa, 1.3.6.
88. Gopatha Brāhmaṇa, 1.3.3.
89. Gopatha Brāhmaṇa, 1.4.24.
90. Gopatha Brāhmaṇa, 1.3.11.
91. Gopatha Brāhmaṇa, 1.3.15.
92. Gopatha Brāhmaṇa, 1.1.31.
93. Gopatha Brāhmaṇa, 1.4.13.
94. Gopatha Brāhmaṇa, 1.2.9.
95. Gopatha Brāhmaṇa, 1.1.14.
96. Gopatha Brāhmaṇa, 2.2.5.

तद् अपि श्लोकाः
छिन्नभिन्नोऽपध्वस्तो विश्रुतो बहुधा मखः।
इष्टापूर्तद्रविणंगृह्य यजमानस्यावापतत्।
ऋत्विजां च विनाशाय राज्ञो जनपदस्य च।
संवत्सरविरिष्टं तद् यत्र यज्ञो विरिष्यते।
दक्षिणाप्रवणीभूतो यज्ञो दक्षिणतः स्मृतः।
हीनाङ्गो रक्षसां भागो ब्रह्मवेदाद् असंस्कृतः।
चतुष्पात् सकलो यज्ञश् चातुर्होर्त्रविनिर्मितः।
चतुर्विधै स्थितो मन्त्रैर्ऋत्विग्भिर्वेदपारगैः।
प्रायश्चित्तैर्अनुध्यानैर्ानुज्ञानानुमन्त्रणैः।
होमैश् च यज्ञविभ्रंशं सर्वं ब्रह्मा प्रपूरयेद्। इति
तस्माद् यजमानो भृग्वङ्गिरोविदम् एव तत्र ब्रह्माणं वृणीयात
स हि यज्ञं तारयतीति ब्राह्मणम् ।2.2.5।

97. Chāndogya Upaniṣad, 3.4.1-2.
98. Brahmanda Purāṇa, 1.2.35.63-69.

खड्गः कृत्वा मया युक्तं पुराणमृषिसत्तमाः ।
आत्रेयः सुमतिर्धीमान्काश्यपो ह्यकृतव्रणः ॥

भारद्वाजोऽग्निवर्चाश्च वासिष्ठा मित्रयुश्च यः ।
सावर्णिः सोमदत्तिष्च सुशर्मा शांशपायनः ॥
एते शिष्या मम प्रोक्ताः पुराणेषु धृतव्रताः।
त्रिभिस्तत्र कृतास्तिस्रः संहिताः पुनरेव हि॥
काश्यपः संहिता कर्ता सावर्णिः शांशपायनः।
मामिका तु चतुर्थी स्याच्चतस्रो मूलसंहिताः॥
सर्वास्ता हि चतुष्पादाः सर्वाश्चैकार्थवाचिकाः।
पाठांतरे वृथाभूता वेदशाखा यथा तथा॥
चतुः साहस्रिकाः सर्वाः शांशपायनिकामृते ।
लौमहर्षणिका मूला ततः काश्यपिका परा॥
सावर्णिका तृतीयासावृजुवाक्यार्थमंडिता।
शांशपायनिका चान्या नोदनार्थविभूषिता॥

99. Āpastamba Dharmasūtra, 1.10.29.7.
100. Gopatha Brāhmaṇa, 1.4.18.
101. Vedāṅga Jyotiṣa, Verse 5.
102. Vadhula Anvākhyāna Brāhmaṇa, 1.7.8.
103. Mahābhārata, Śānti Parva, 342.72-73.
104. Śāṅkhāyana Śrautasūtra 15.16.11.
    तेनो ह त्रिष्टोमेन वृद्धद्युमन् आभिप्रतारिण ईजे। तमु ह ब्राह्मणोऽनुव्याजहार। न क्षत्रस्य धृतिनायष्ट इममेव प्रति समरं कुरवः कुरुक्षेत्राच्च्योष्यन्त इति।
105. Śāṅkhāyana Śrautasūtra, 16.2.1-36.
    मनुर्वैवस्वत इति प्रथमे ।1।
    तस्य मनुष्या विशस्त इम आसत इति गृहमेधिन उपदिशति ।2।
    ऋचोवेदो वेदः सोऽयमिति सूक्तं निगदेत् ।3।
    यमो वैवस्वत इति द्वितीये ।4।
    तस्य पितरो विशस्त इम आसत इति स्थविरानुपदिशति ।5।
    यजुर्वेदो वेदः सोऽयमिति याजुषमनुवाकं निगदेत् ।6।
    वरुण आदित्य इति तृतीये ।7।
    तस्य गन्धर्वा विशस्त इम आसत इति यूनः शोभनानुपदिशति ।8।
    अथर्ववेदो वेदः सोऽयमिति भेषजं निगदेत् ।9।
    सोमो वैष्णव इति चतुर्थे ।10।
    तस्याप्सरसो विशस्ता इमा आसत इति युवतीः शोभना उपदिशति ।11।
    आङ्गिरसो वेदो वेदः सोऽयमिति घोरं निगदेत् ।12।
    अर्बुदः काद्रवेय इति पञ्चमे ।13।
    तस्य सर्पा विशस्त इम आसत इति सर्पान्सर्पविदो वोपदिशति ।14।

सर्पविद्या वेदः सोऽयमिति सर्पविद्यां निगदेत् ।15।
कुबेरो वैश्रवण इति षष्ठे ।16।
तस्य रक्षांसि विशस्तानीमान्यासत इति सेलगान्पापकृतो वोपदिशति ।17।
रसोविद्या वेदः सोऽयमिति रक्षोविद्यां निगदेत् ।18।
असितो धान्वन इति सप्तमे ।19।
तस्यासुरा विशस्त इम आसत इति कुसीदिन उपदिशति ।20।
असुरविद्या वेदः सोऽयमिति मायां कांचित्कुर्यात् ।21।
मत्स्यः सांमद इत्यष्टमे ।22।
तस्योदकचरा विशस्त इम आसत इति मत्स्यान्मत्स्यविदो वोपदिशति ।23।
इतिहासवेदो वेदः सोऽयमितीतिहासमाचक्षीत ।24।
तार्क्ष्यो वैपश्यत
इति नवमे ।25।
तस्य वयांसि विशस्तानीमान्यासत इति वयांसि ब्रह्मचारिणो वोपदिशति ।26।
पुराणवेदो वेदः सोऽयमिति पुराणमाचक्षीत ।27।
धर्म इन्द्र इति दशमे ।28।
तस्य देवा विशस्त इम आसत इति यूनोऽप्रतिग्राहकाञ्छ्रोत्रियानुपदिशति ।29।
सामवेदो वेदः सोऽयमिति साम गायात् ।30।

106. Śāṅkhāyana Śrautasūtra, 16.8.27.
107. Śāṅkhāyana Śrautasūtra, 16.11.14.
108. Śāṅkhāyana Śrautasūtra, 15.17-27.
109. Āśvalāyana Grihyasūtra, 3.4.4.

देवतास्तर्पयति प्रजापतिर्ब्रह्मा वेदा देवा ऋषयः सर्वाणि च्छन्दांस्योङ्कारो वषट्कारो व्याहृतयः सावित्री यज्ञा द्यावापृथिवी अन्तरिक्षमहोरात्राणि सांख्याः सिद्धाः समुद्रा नद्यो गिरयः क्षेत्रौषधिवनस्पतिगन्धर्वाप्सरसो नागा वयांसि गावः साध्या विप्रा यक्षा रक्षांसि भूतान्येवमन्तानि ।1।
अथ ऋषयः शतर्चिनो माध्यमा गृत्समदो विश्वामित्रो वामदेवोऽत्रिर्भरद्वाजो वसिष्ठः प्रगाथाः पावमान्यः क्षुद्रसूक्ता महासूक्ता इति ।2।
प्राचीनावीती ।3।
सुमन्तुजैमिनिवैशम्पायनपैलसूत्रभाष्यभारतमहाभारतधर्माचार्या जानन्ति बाहविगार्ग्यगौतमशाकल्यबाभ्रव्यमाण्डव्यमाण्डूकेया गार्गी वाचक्नवी वडवा प्रातिथेयी सुलभा मैत्रेयी कहोलं कौषीतकं महाकौषीतकं पैङ्ग्यं महापैङ्ग्यं सुयज्ञं शाङ्खायनमैतरेयं महैतरेयं शाकलं बाष्कलं सुजातवक्त्रमौदवाहिं महौदवाहिं सौजामिं शौनकमाश्वलायनं ये चान्य आचार्यास्ते सर्वे तृप्यन्त्विति ।4।

110. Kātyāyana Śulbasūtra, 1.1.2.
111. Nidānasūtra, 5.5.

गवामयनस्योपायांश्चतुरः प्रतिपादयेत् । तेषां नाक्षत्रं प्रथमं तस्य सप्तविम्शिनो मासाः, सप्तविम्शतिर्नक्षत्राणीति ।

112. Nidānasutra, 1st Prapāthaka.
    तान्येतानि सर्वाणि कृतच्छन्दान्सि भवन्ति.... तान्येतानि सर्वाणि द्वापरच्छन्दान्सि भवन्ति..... तान्येतानि सर्वाणि त्रेताकलिच्छन्दान्सि भवन्ति ।
113. Mahābhārata, Sabha Parva 5.21
    कश्चिद् अभ्यस्यते शश्वद् गृहे ते भरतर्षभ ।
    धनुर्वेदस्य सूत्रं च यन्त्रसूत्रं च नागरम्।।
114. Mahābhārata, 1.72.220.
115. Agni Purāṇa, 249.3-6.
116. Mahābhārata, Śānti Parva, 284.142.
117. Bhāgavata Purāṇa, 5.7.
118. Bhāgavata Purāṇa, 3.7.5.
119. Rāmāyaṇa, Uttarakānda.
    अपूर्वांशपाठ्यजातिश्च गेयेन समलंकृताम्
    तालैश्च बहुभिर्बद्धां तन्त्रिलयसमन्विताम् ।
    स्वराणां लक्षणज्ञांश्च दत्तिलप्रभृतिद्विजान्
    गान्धर्वशास्त्रकुशलान् कलामात्रासु कुशलान् ।
120. Ramayana (3.73.28-31)
    तत्र आक्रमितुम् नागाः शक्नुवन्ति तद् आश्रमे।
    ऋषेः तस्य मतंगस्य विधानात् तत् च काननम्।
    मातंग वनम् इति एव विश्रुतं रघुनंदन।
    तस्मिन् नंदन संकाशे देव अरण्य उपमे वने।
    नाना विहग संकीर्णे रंस्यसे राम निर्वृतः।
    ऋष्यमूकः तु पंपायाः पुरस्तात् पुष्पित द्रुमः।
121. Mahābhārata, Sabhā Parva, 8.29.
    अगस्त्योऽथ मतङ्गश्च कालो मृत्युस्तथैव च।
    यज्वानश्चैव सिद्धाश्च ये च योगशरीरिणः।
122. Raghuvaṁśa, 5.53-55.
123. Vātsyāyana Kāmasūtra, 1.17.
124. Mahābhārata, Śānti Parva, 58.81-86.
125. Mahābhārata, Śānti Parva, Chapter 123.
    अत्राप्युदाहरन्तीमम् इतिहासं पुरातनम् ।
    कामन्दस्य च संवादम् अङ्गारिष्ठस्य चोभयोः।
    कामन्दम् ऋषिम् आसीनम् अभिवाद्य नराधिपः।

अङ्गारिष्ठो ऽथ पप्रच्छ कृत्वा समयपर्ययम् ।
यः पापं कुरुते राजा काममोहबलात् कृतः ।
प्रत्यासन्नस्य तस्यर्षे किं स्यात् पापप्रणाशनम्।
अधर्मो धर्म इति हि योऽज्ञानाद् आचरेद् इह ।
तं चापि प्रथितं लोके कथं राजा निवर्तयेत्।

126. Manusmriti, 1.69-73.
चत्वार्याहुः सहस्राणि वर्षाणां तत्कृतं युगम् ।
तस्य तावच्छती संध्या संध्यांशश्च तथाविधः ।
इतरेषु ससंध्येषु ससंध्यांशेषु च त्रिषु ।
एकापायेन वर्तन्ते सहस्राणि शतानि च ।
यदेतत्परिसंख्यातं आदावेव चतुर्युगम् ।
एतद्द्वादशसाहस्रं देवानां युगं उच्यते ।
दैविकानां युगानां तु सहस्रं परिसंख्यया ।
ब्राह्मं एकं अहज्ञेयं तावतीं रात्रिं एव च ।
तद्वै युगसहस्रान्तं ब्राह्मं पुण्यं अहर्विदुः ।
रात्रिं च तावतीं एव तेऽहोरात्रविदो जनाः ।

127. Mahābhārata, 12.23.
128. Shātātapa Smriti, 6.47.
129. Rāmāyaṇa, Araṇya Kānda, Sarga 5.
130. Sanskrit Vyākaraṇa Śāstra ka Itihas by Yudhishthir Mimansak, Volume I.
131. Mahābhārata, 13.45.84-88.
शाकल्यः संशितात्मा वै नववर्षशतान्यपि।
आराधयामास भवं मनोयज्ञेन केशव॥
तं चाह भगवांस्तुष्टो ग्रन्थकारो भविष्यसि।
वत्साक्षया च ते कीतिस्त्रेलोक्ये वै भविष्यति॥
अक्षयं च कुलं तेऽस्तु महर्षिभिरलंकृतम्।
भविष्यति द्विजश्रेष्ठः सूत्रकर्ता सुतस्तव॥
सावर्णिश्चापि विख्यात ऋषिरासीत्कृते युगे।
इह तेन तपस्तप्तं षष्टिवर्षशतान्यथ॥
तमाह भगवान्रुद्रः साक्षात्तुष्टोस्मि तेऽनघ।
ग्रन्थकृल्लोकविख्यातो भवितास्यजरामरः॥

132. Kāśikā Vritti, 6.2.104.
133. Baudhāyana Śrautasūtra.
भृगूणामेवादितो व्याख्यास्यामो मार्कण्डेया मान्डूका माण्डव्या कांसय आलेखना दार्भायणाः शार्कराक्षा दैवतायनाः शौनकायनाः मान्डूकेयाः पार्षिकाः साङ्काः

प्रान्तायनाः पैलाः पैङ्गलायनाः दाध्रेषयो बाह्यकयो वैश्वानरयो वैहीनरयो विरोहिता बार्हा गौष्ट्रायणा ऐष्टेषयः काशकृत्स्नाः वाग्भूतया ऋतभागा ऐतिशायना जानायनाः पाणिनिर्वाल्मीकिः स्थौलपिण्ड्यः शैखावता जिहीतयः सावर्णिर्वाकायना बालायना सौकृतयो मण्डवित्सौविष्टयो हस्त्याग्रयः शौद्धकयो वैकर्णा औपजिह्वय औरशयः काम्बलोदरयः काठोरकृद्वैहलिर्विरूपाक्षा वृकाश्वा उच्चौर्मन्यवो दैवमत्या आर्कायणा मार्कायणाः काह्वायना वायवायनिनो शांकरवाः कारबवश्चान्द्रमगाङ्गेया अनुपेया याज्ञिका जाबालिर्बाहुमित्रायणा आपिशलयो वैष्टपुरेया लोहितायना उष्ट्राक्षा नाडायनाः शारद्वतायना राजितवाहा वत्सा वात्स्यायना इत्येके.....

134. Mahābhāṣya, 3.2.108.
135. Aṣṭādhyāyī, 2.4.69.
136. Kātyāyana Vārtikas on Aṣṭādhyāyī, 7.1.2.
137. Aṣṭādhyāyī, 4.1.80.
138. Mahābhāṣya, 6.2.36 & 1.4.68.
139. Kāśikā Vritti, 6.3.36.
140. Kāśikā Vritti, 6.2.104.
141. Mahābhārata, Anuśāsana Parva, 53.30.
142. Kāśikā Vritti, 5.1.58.
143. Aṣṭādhyāyī, 4.1.105.
144. Aṣṭādhyāyī, 4.1.99 & 109.
145. Mahābhārata, Śānti Parva, Chapter 275.
146. Bhagavad Gītā, 10.26.
147. Mahābhārata, Śānti Parva, 337.60-61.
148. Mahābhārata, Śānti Parva, Chapter 180.
149. Aṣṭādhyāyī, 3.3.122.
150. Mahābhārata, 13.4.331.
151. Vāyu Purāṇa, Adhyaya 1.23.201-204

    तत्रापि मम ते पुत्रा भविष्यन्ति सुधार्मिकाः।
    उलूको वैद्युतश्चैव सर्वको ह्याश्वलायनः।
    प्राप्य माहेश्वरं योगं गन्तारस्ते तथैव हि ॥
    सप्तविंशतिमे प्राप्ते परिवर्त्ते क्रमागते।
    जातूकर्ण्यो यदा व्यासो भविष्यति तपोधनः॥
    तदाऽप्यहं भविष्यामि सोमशर्म्मा द्विजोत्तमः।
    प्रभासतीर्थमासाद्य योगात्मा लोकविश्रुतः॥
    तत्रापि मम ते पुत्रा भविष्यन्ति तपोधनाः।

अक्षपादः कणादश्च उलूको वत्स एव च ॥

152. Mahābhārata's Śānti Parva, 284.148.
153. Viśvakarmā Vāstuśāstra, 1.23.
     कृत्तिकाद्याः सप्त सप्त पूर्वादिषु प्रदक्षिणे ।
     अष्टाविंशति ऋक्षाणि ततः चन्द्रमुदियते ।
154. Rāmāyaṇa, Sundarakānda, Sarga 24
155. "Dating the Surya Siddhanta using computational simulation of proper motions and ecliptic variations" by Anil Narayanan, Indian Journal of History of Science, 45.4 (2010), pp.455-476.

Chapter 5

1. Vālmiki Rāmāyaṇa, 1.18.8-11.
2. Inscriptions of Ancient Nepal, Vol III by D R Regmi, Abhinav Publications, New Delhi, 1983, pp. 268.
3. Ibid, pp.269.
4. Vālmiki Rāmāyaṇa, 6.128.113, 114, 117, 121 and 123.
5. Ibid, 6.4.52-53.
6. Ibid, 2.3.4.
7. Ibid, 3.56.24.
8. Ibid, 6.12.18.
9. Ibid, 4.53.2 & 4.
10. Ibid, 5.14.2.
11. Ibid, 4.1.22, 4.26.14, 4.30.64, 4.30.78 & 4.53.9.
12. Ibid, 4.16.37
13. Ibid, Uttara Kānda, 42nd Sarga.
14. Ibid, 3.47.10.
15. Ibid, 2.118.34.
16. Ibid, 1.71.24.
17. Ibid, 1.72.13.
18. Ibid, 2.15.3.
19. Ibid, 2.14.21-22.
20. Ibid, 2.4.12.
21. Ibid, 2.4.17.
22. Ibid, 2.4.18.
23. Ibid, 2.41.11-12.

24. Ibid, 2.99.41.
25. Ibid, 5.57.1-2.
26. Ibid, 6.4.3-5.
27. Ibid, 6.4.48.
28. Ibid, 6.4.50-51.
29. Ibid, 6.102.
30. Ibid, 6.126.54.
31. Ibid, 6.4.49.
32. Ibid, 4.63.15.
33. "Parāśaratantra" by RN Iyengar, Jain University Press, 2013, pp. 133-135.
34. Mahābhārata, 3.3.17.
35. Vālmiki Rāmāyaṇa, 3.16.12.
36. Ibid, 3.16.4 & 6.
37. Ibid, 2.3.41, 2.4.2, 2.4.21-22, 2.7.11, 2.15.3, 2.26.9, 2.15.33, 2.7.31, 2.3.37, 6.126.54.
38. https://en.wikipedia.org/wiki/Sea_level_rise
39. Vālmiki Rāmāyaṇa, 4.58.
40. Ibid, 1.5.7.
41. Ibid, 2.32.15.
42. Ibid, 2.1.29, 2.1.20 & 5.35.14.
43. Ibid, 1.65.23.
44. Ibid, 4.3.28-29.
45. Ibid, 2.2.21, 2.2.8, 1.42.8, 3.50.20 & 1.1.97.
46. Ibid, 4.66.
47. Bhāgavata Purāṇa, 10.76.
48. Vālmiki Rāmāyaṇa, 5.2.1.
49. Ibid, 5.9.2.
50. Mahābhārata, 13.6.
51. Yoga Vāsiṣṭha, 3.16.50.

Chapter 6

1. South Indian Inscriptions, Vol. VI, No. 202, pp. 95-98.
2. "The Chronology of India: From Mahābhārata to Medieval Era" by Vedveer Arya, Aryabhata Publications, 2019, Chapter 2.
3. Mahābhārata, Udyoga Parva, 81.7.

4. Ibid, 151.21.
5. Appendix to Epigraphia Indica, Volumes XIX to XXIII, pp.142, No. 1057 (Jaisalmer Vaishnava Temple inscription of Mularaja is dated in the 4898th year of the Yudhishthira era i.e. the epoch of Kaliyuga 3102 BC.).
6. Āryabhaṭīyam, 1.5.
7. Jyotirvidābharaṇam, 22.21.
8. Ibid, 10.111.
9. Brihat Saṁhitā, 13.3.
10. EI, XXXVII, 1967, p.1-5.
11. EI, XII, pp.65-79.
12. IA, V, pp.70.
13. Mahābhārata, Sabhā Parva, 72.21.
14. Ibid, Bhishma Parva, 3.28-29.
15. Ibid, Bhishma Parva, 2.23.
16. Ibid, Musala Parva, 3.16-17.
17. Ibid, Udyoga Parva, 141.10.
18. Ibid, Bhishma Parva, 2.32.
19. Ibid, Udyoga Parva, 141.7.
20. Ibid, Bhishma Parva, 3.25.
21. Ibid, Bhishma Parva, 3.13.
22. Ibid, Bhishma Parva, 3.16.
23. Ibid, Udyoga Parva, 141.8
24. Ibid, Bhishma Parva, 3.17.
25. Ibid, Bhishma Parva, 3.15.
26. Ibid, Udyoga Parva, 2.30 & 31.
27. Ibid, Udyoga Parva, 3.44.
28. Ibid, Udyoga Parva, 8.17.
29. Simhalese English Dictionary by B Clough, Published in 1892.
30. Mahābhārata, Sabhā Parva, 11.28.
31. Ibid, Ādi Parva, 124.22.
32. Ibid, Virāta Parva, 52.3.
33. Bhāgavata Purāṇa (2.2.24, 5.23.4-8 & 6.6.14), Brahmāṇḍa Purāṇa (1.1.85 and 2.23.99), Matsya Purāṇa (125.5-9 & 127.16-25), Vishnu Purāṇa (2.12) and Vāyu Purāṇa (1.101).

Chapter 7

1. Cḥāndogyopaniṣad, 3.17.6.
2. Rigveda, 3.36.10.
3. Rāmāyaṇa, Uttara Kānda, 53rd Sarga.
4. Mahābhārata, 3.191.
5. Mahābhārata, Droṇa Parva, 10.22.
6. Padma Purāṇa, 4.13.8-19.

   दिलीपेन पुरा पृष्टो वसिष्ठो मुनिसत्तमः ।
   तच्छृणुष्व महाप्राज्ञ सर्वपातकनाशनम् ।
   दिलीप उवाच–
   भाद्रे मास्यसिताष्टम्यां यस्यां जातो जनार्द्दनः।
   तदहं श्रोतुमिच्छामि कथयस्व महामुने ।
   कथं वा भगवान्जातः शंखचक्रगदाधरः।
   देवकीजठरे विष्णुः किं कर्तुं केन हेतुना ।
   वसिष्ठ उवाच–
   शृणु राजन्प्रवक्ष्यामि कस्माज्जातो जनार्द्दनः।
   पृथिव्यां त्रिदिवं त्यक्त्वा भवते कथयाम्यहम् ।
   पुरा वसुंधरा ह्यासीत्कंसादिनृपपीडिता।
   स्वाधिकारप्रमत्तेन कंसदूतेन ताडिता।
   क्रंदती क्रंदती सा तु ययौ घूर्णितलोचना।
   यत्र तिष्ठति देवेश उमाकांतो वृषध्वजः।
   कंसेन ताडिता नाथ इति तस्मै निवेदितुम्।
   बाष्पवारीणि वर्षंति विवर्णा साविमानिता।
   क्रंदंतीं तां समालोक्य कोपेन स्फुरिताधरः।
   उमयासहितः सर्वैर्देववृंदैरनुव्रतः।
   आजगाम महादेवो विधातृभवनं रुषा।
   गत्वा चोवाच ब्रह्माणं कंसध्वंसनहेतवे।
   उपायः सृज्यतां ब्रह्मन्भवता विष्णुना सह।
   ऐश्वरं तद्वचः श्रुत्वा गंतुं प्राह कृतात्मभूः।
   क्षीरोदे यत्र वैकुंठः सुप्तोऽस्ति भुजगोपरि।
   हंसपृष्ठं समारुह्य हरेरंतिकमाययौ।
   तत्र गत्वा च तं धाता देववृंदैर्हरादिभिः।
   संयुक्तः स्तूयते वाग्भिः कोमलं वाग्विदांवरः।
7. Mahābhārata, Udyoga Parva, Adhyāya 48.
8. Harivaṁśa, 2.98.15.

9. "The Origins of the Christian Era: Fiction or Fact" by Vedveer Arya, Aryabhata Publications, Hyderabad, 2019, Chapter 2.
10. Harivaṁśa, 2.56.35.
11. Harivaṁśa, 2.55.7.
12. Harivaṁśa, 2.58.22.
13. Harivaṁśa, 2.55.16.
14. Harivaṁśa, 2.98.15-17.
15. Harivaṁśa, 2.98.24.
16. Skanda Purāṇa, Māheśvara Kaumarikā Khanda, 39.166.
17. "Gulf of Cambay: Cradle of Ancient Civilisation" by Sh. Badrinarayan.
18. Bhāgavata Purāṇa, 2.8.27.

Chapter 8

1. Mahāryabhaṭa Siddhānta, 2.2.
2. Mahāryabhaṭa Siddhānta
3. Matsya Purāṇa, Chapter 272.
4. Āryabhaṭīyam, 2.1.
5. "Aryabhatiya of Aryabhata" by Kripa Shankar Shukla, Indian National Science Academy, New Delhi, 1976, Introduction, pp. XVIII.
6. Laghubhāskarīya-Vivaraṇa of Śaṅkaranārāyaṇa.
   अथ प्रथमस्तावदार्यभटस्य गणितकालक्रियागोललक्षणशास्त्रस्य भाष्यं कृत्वा पुनर्ग्रहकर्मनिबन्धनं बृहद्भास्करीयम् नाम कृत्वा पुनरपि संक्षेपेण अष्टाधिकारकथितग्रहकर्मनिबन्धनं मन्दबुद्धीनामनुग्रहबुद्ध्या गुरुरयं भास्करः स्वनाम सम्बन्धमुपदिदिक्षुः तद्विघ्नोपशमनार्थं भगवते भास्कराय नमस्कर्तुमादविदमाह ।
7. Āryabhaṭīyam, 3.10.
8. "The Chronology of India: From Mahābhārata to Medieval Era" by Vedveer Arya, Aryabhata Publications, Hyderabad, 2019, Chapter 2.
9. Pañchasiddhāntikā, 1.10.
10. Pañchasiddhāntikā, 15.20.
11. Indian History Quarterly, Vol 6, pp, 726-736.
12. Laghubhāskarīya-Vivaraṇa of Śaṅkaranārāyaṇa.
    आचार्यार्यभटं वराहमिहिरम् श्रीमद्गुरुं भास्करम् ।
    गोविन्दं हरिदत्तमत्र शिरसा वक्ष्ये प्रणम्य क्रमात् ।
13. Laghubhāskarīyam, 2nd Śloka.
    काले महति देशे वा स्फुटार्थं यस्य दर्शनम् ।

जयत्यार्यभटः सोऽब्धिप्रान्तप्रोल्लङ्घिसद्यशाः।

14. Āryabhaṭīyam, Golapāda, 14th Śloka.
15. Brahmasphuṭa Siddhānta, 21.9.
16. Āryabhaṭīyam, Gītikāpāda, 8.
17. Sūrya Siddhānta, 12.43-44.
    मेरोरुभयतोर्मध्ये ध्रुवतारे नभःस्थिते ।
    निरक्षदेशसँस्थानामुभये क्षितिजाश्रये ॥
    अतो नाक्षोच्छ्र्यस्तासु ध्रुवयोः क्षितिजस्थयोः ।
    नवतिर्लम्बकाँशास्तु मेरावक्षाँशकास्तथा ॥
18. Rigveda, 1.65-73, 9.97.31-44.
19. Brihat Pārāśara Horāśāstra, 41.32.
    वर्तमानयुगे जातस्तथा राजा युधिष्ठिरः ।
    भविता शालिवाहाद्यस्तथैव द्विजसत्तम ॥

Chapter 9

1. "How old is Indian Agriculture?" by Sh. Anil Suri, published at http://indiafacts.org/how-old-is-indian-agriculture/
2. Śatapatha Brāhmaṇa, 3.5.4.
3. Rigveda, 9.85 & 10.123.
4. Rigveda, 10.123.
5. Rigveda, 10.72.8-9.
   अष्टौ पुत्रासो अदितेर्ये जातास्तन्वस्परि ।
   देवाँ उप प्रैत्सप्तभिः परा मार्ताण्डमास्यत् ॥
   सप्तभिः पुत्रैरदितिरुप प्रैत्पूर्व्यं युगम् ।
   प्रजायै मृत्यवे त्वत्पुनर्मार्ताण्डमाभरत् ॥
6. Taittirīya Āraṇyaka, 1.13.3.
   परा मार्ताण्डमास्यत्, इति। सप्तभिः पुत्रैरदितिः। उपप्रैत्पूर्व्यं युगम्। प्रजायै मृत्यवे तत्। परा मार्ताण्डमाभरदिति, इति।ताननुक्रमिष्यामः, इति। मित्रश्च वरुणश्च। धाता चार्यमा च। अशश्च भगश्च। इन्द्रश्च विवस्वा श्चेत्येते, इति। हिरण्यगर्भो हँ सः शुचिशत्। ब्रह्मजज्ञानं तदित्पदमिति, इति। गर्भः प्राजापत्यः। अथ पुरुषः सप्तपुरुषः, इति॥ अमूं दिव सप्तभिरेते चत्वारि च॥
7. Brihadāraṇyaka Upaniṣad, 3.9.1.
8. Rigveda, 2.33.1.
9. Taittirīya Āraṇyaka, 1.10.1.
10. Maitrāyaṇī Saṁhitā, 1.6.13.

11. Taittirīya Brāhmaṇa, 1.1.4.4.
    इडा वै मानवी यज्ञानुकाशिन्यासीत्। साशृणोत्। असुरा अग्निमादधत इति। तदगच्छत्। त आहवनीयमग्र आदधत। अथ गार्हपत्यम्। अथान्वाहार्यपचनम्। साब्रवीत्। प्रतीच्येषाँ श्रीरगात्। भद्रा भूत्वा पराभविष्यन्तीति ।
12. Vāyu Purāṇa, 32.47-48.
13. Rigveda, 8.77.10.
14. Rāmāyaṇa, 1.5.6.
15. Agni Purāṇa, Chapter 278.
16. Mahābhārata's Śāntiparva, Adhyaya 4.
17. Śatapatha Brāhmaṇa, 13.5.4.7.
18. Rigveda, 8.20.24-25.
19. Rigveda, 8.46.21-24.
20. Rigveda, 10.75.
21. Rigveda, 7.18.7.
22. Brahma Purāṇa, 11.55-60.
23. Aitareya Brāhmaṇa, 8.4, Kauṣītakī Upaniṣad, 4.1 and Gopatha Brāhmaṇa, 2.9.
24. Rigveda, 6.75 & 10.87.
25. Rigveda, 6.27.
26. Pañchaviṁśa Brāhmaṇa, 25.7.2.
27. Rigveda, 10.13.
28. Saura Purāṇa, 30.30-31.
29. Kāthaka Saṁhitā, 22.7.
30. Mahābhārata, 3.190.
31. Garuda Purāṇa, 1.138.44.
32. Taittirīya Kāthakam, 1.9.9.
33. Rigveda, 6.20.6.
34. Brihadāraṇyaka, 2.1.1.
35. Aitareya Brāhmaṇa, 7.34.
36. Vishnu Purāṇa, 6.6 & 7.
37. Vishnu Purāṇa, 6.6.9.
38. Garuda Purāṇa, 1.138.44.
39. Rigveda, 9.68, 10.45-46.
40. Brahmanda Purāṇa, 2.61.
41. Manusmriti, 10.22.
42. Aṣṭādhyāyī, 4.2.83.
43. Vālmiki Rāmāyaṇa, 1.32.25-26.
44. Aitareya Brāhmaṇa, 7.3.5.
45. Śāṅkhāyana Śrautasūtra, 15.25.

46. Rigveda, 3.53.
47. Vāyu Purāṇa, 99th Adhyāya.
48. Rigveda, 10.98.
49. Śāṅkhāyana Śrautasūtra, 15.16.11.
50. Aitareya Brāhmaṇa, 8.14.
51. Vālmiki Rāmāyaṇa, 4.43.36-37.
52. Mahābhārata, 2.48.2.
53. Mahābhārata, 1.94. 31-43.
आर्क्षे संवरणे राजन् प्रशासति वसुंधराम्।
संक्षयः सुमहान् आसीत् प्रजानाम् इति शुश्रुमः॥
व्यशीर्यत ततो राष्ट्रं क्षयैर्नानाविधैस् तथा।
क्षुन्मृत्युभ्याम् अनावृष्ट्या व्याधिभिश्च समाहतम्॥
अभ्यघ्नन् भारतांश्चैव सपत्नानां बलानि च।
चालयन् वसुधां चैव बलेन चतुरङ्गिणा॥
अभ्ययात् तं च पाञ्चाल्यो विजित्य तरसा महीम्।
अक्षौहिणीर्भिदशभिः स एनं समरे ऽजयत॥
ततः सदारः सामात्यः सपुत्रः ससुहृज्जनः।
राजा संवरणस्तस्मात्पलायत महाभयात्॥
सिन्धोर्नदस्य महतो निकुञ्जे न्यवसत् तदा।
नदी विषयपर्यन्ते पर्वतस्य समीपतः।
तत्रावसन् बहून् कालान् भारता दुर्गमाश्रिताः॥
तेषां निवसतां तत्र सहस्रं परिवत्सरान।
अथाभ्यगच्छद् भरतान् वसिष्ठो भगवान् ऋषिः॥
तम् आगतं प्रयत्नेन प्रत्युद्गम्याभिवाद्य च।
अर्घ्यम् अभ्याहरंस् तस्मै ते सर्वे भारतास् तदा॥
निवेद्य सर्वम् ऋषये सत्कारेण सुवर्चसे।
तं समाम् अष्टमीम् उष्टं राजा वव्रे स्वयं तदा॥
पुरोहितो भवान् न ऽसतु राज्याय प्रयतामहे।
ओम् इत्योवं वसिष्ठोऽपि भारतान् प्रत्यपद्यत॥
अथाभ्यषिञ्चत साम्राज्ये सर्वक्षत्रस्य पौरवम्।
विषाण भूतं सर्वस्यां पृथिव्याम् इति नः श्रुतम॥
भरताध्युषितं पूर्वं स ऽध्यतिष्ठत पुरोत्तमम्।
पुर्नबलिभृतश्चैव चक्रे सर्वमहीक्षितः॥
ततः स पृथिवीं प्राप्य पुनर्ईजे महाबलः।
आजमीढे महायज्ञैर्बहुर्भिभूरिदक्षिणैः॥

ततः संवरणात् सौरी सुषुवे तपती कुरुम्।
राजत्वे तं प्रजाः सर्वा धर्मज्ञ इति वव्रिरे॥
तस्य नाम्नाभिविख्यातं पृथिव्यां कुरुजाङ्गलम्।
कुरुक्षेत्रं स तपसा पुण्यं चक्रे महातपाः॥

54. Harivaṁśa, 1.20.
55. Rigveda, 8.5.39.
56. Kautilya Arthaśāstra (*Dandakyo nāma Bhojaḥ Brāhmaṇa Kanyām abhilipsyamānaḥ Ābandhurāśir vinanāśa.....* a Bhoja known as Dandaka, making a lascivious attempt on a Brahman girl, perished alongwith his relations and kingdom.)
57. Bhāgavata Purāṇa, 11.5.38-40.
58. Mahābhārata, 12.28-29.

Chapter 10

1. Śatapatha Brāhmaṇa, 3.2.22-24
   ते देवा ईक्षांचक्रिरे। योषा वा इयं वाग्यदेनं न युवितेहैव मा तिष्ठन्तमभ्येहीति ब्रूहि तां तु न आगतां प्रतिप्रब्रूतादिति सा हैनं तदेव तिष्ठन्तमभ्येयाय तस्मादु स्त्री पुमांसं संस्कृते तिष्ठन्तमभ्यैति तां हैभ्य आगतां प्रतिप्रोवाचेयं वा आगादिति।22।
   तां देवाः। असुरेभ्योऽन्तरायंस्तां स्वीकृत्याग्नावेव परिगृह्य सर्वहुतमजुहवुराहुतिर्हि देवानां स यामेवामूमनुष्टुभा जुहवुस्तदेवैनां तद्देवाः स्व्यकुर्वत तेऽसुरा आत्तवचसो हेऽलवो हेऽलव इति वदन्तः पराबभूवुः।23।
   तत्रैतामपि वाचमूदुः। उपजिज्ञास्यां स म्लेच्छस्तस्मान्न ब्राह्मणो म्लेच्छेदसुर्या हैषा वाक्। एवमेवैष द्विषतां सपत्नानामादत्ते वाचं तेऽस्यात्तवचसः पराभवन्ति य एवमेतद्वेद।24।
2. Bharata Nātyaśāstra, 17.26-28.
3. Bharata Nātyaśāstra 17.29-30
4. Brihaddeśī, 302-308.
5. Vālmiki Rāmāyaṇa, 5.30.17-18.
6. Vālmiki Rāmāyaṇa, 5.30.19.
7. Manusmriti, 10.45.
8. Rigveda, 1.163.9 & 11.
9. Gopatha Brāhmaṇa, 1.1.10.
10. Brahmāṇḍa 2.74.11, Brahma 13.152, Harivaṁśa 1841, Matsya 48.9, Vāyu 99.11, cf. also Viṣṇu 4.17.5, Bhāgavata 9.23.15.

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Select Bibliography

Abhyankar, KD	On Pre-Siddhāntic Evolution of the Indian Calendar, Astronomical Society of India, 26, 67-74 (1998).
Abhyankar, KD	A Search for the Earliest Vedic Calendar, Indian Journal of History of Science, 28 (1), 1-14 (1993).
Abhyankar, KD	On Two Important Provisions in Vedāṅga-Jyotiṣa, Indian Journal of History of Science, 37 (3), 213-222 (2002).
Abhyankar, KD	5-Year Yuga in Vedāṅga Jyotiṣa, I Indian Journal of History of Science, 39 (2), 205-226 (2004).
Achar, BN Narahari	On the Astronomical Basis of the Date of Śatapatha Brāhmaṇa: A Re-Examination of Dikshit's Theory, Indian Journal of History of Science, 35 (1), 1-19 (2000).
Badrinarayan	Gulf of Cambay: Cradle of Ancient Civilisation, Archaeology Online, 2005.
Bhatnagar, Pushkar	Dating The Era of Lord Ram, published in 2004.
Dikshit, SB	The Age of the Śatapatha Brāhmaṇa, Indian Antiquary, 24, 245-246 (1895).
Dwivedi, Krishnachandra	Brihat Saṁhitā of Varāhamihira, Two Volumes, Sampūrṇānand Sanskrit University, Varanasi, 1996.
Dwivedi, Sudhakara & Thibhut, G	Pañchasiddhāntikā, the Astronomical Work of Varāhamihira, published in 1889.
Frawley, David	Gods, Sages and Kings: Vedic Secrets of Ancient Civilisation, Motilal Banarsidas, Delhi, 1995.
Hari, K Chandra	On The Origin of Sidereal Zodiac and Astronomy, Indian Journal of History of Science, 28 (1), 15-34 (1993).
Hari, K Chandra	Date of the Solar Orbit of Śatapatha Brāhmaṇa, Indian Journal of History of Science, 35 (1), 20-25 (2000).
Hari, K Chandra	Epoch of Romaka Siddhānta, Indian Journal of History of Science, 41 (3), 263-270 (2006).
Iyengar, RN	Pārāśaratantra, Jain University Press, Ramanagara District, Karnataka, 2013.

Jain, KL	Chronology of India in the Puranas, Itihas Vidya Prakashan, Delhi, 1993.
Kak, Subhash	The Sun's Orbit in Brāhmaṇas, Indian Journal of History of Science, 33(3), 175-191 (1998).
Kak, Subhash	Astronomy of The Śatapatha Brāhmaṇa, Indian Journal of History of Science, 28 (1), 15-34 (1993).
Kaundinyayana, Shivraj	Vedāṅgajyotiṣam with Somākara's commentary, Chaukhamba Vidyabhavan, Varanasi, 2005.
Mimansak, Yudhishthira	Sanskrit Vyakaran Shastra Ka Itihas, in three volumes, Ramlal Kapur Trust, Sonipat.
Mittal, JP	History of Ancient India: A New Version, From 7300 BC to 4250 BC, Volume I, Atlantic Publishers & Distributors (P) Ltd, 2014.
Narayanan, Anil	Dating the Surya Siddhānta Using Computational Simulation of Proper Motions and Ecliptic Variations, Indian Journal of History of Science, 45.4, 455-476 (2010).
Oak, Nilesh Nilkanth	The Historic Rama, published in 2014
Oak, Nilesh Nilkanth	When Did the Mahabharata War Happen, The Mystery of Arundhati, published in 2011
Pandeya, Ramachandra	Surya Siddhānta with the Sanskrit commentary 'Gudhārthaprakāśikā", Chaukhamba Surabharati Prakashan, Varanasi, 2010.
Pandeya, Ramachandra	Kālidāsa's Jyotirvidābharaṇam, Motilal Banarsidas,, New Delhi, 2011.
Pargiter, FE	Ancient Indian Historical Tradition, published by Motilal Banarsidas, New Delhi, 1972.
Patil, Devendrakumar Rajaram	Cultural History From The Vayu Purana, Motilal Banarsidas, Delhi, 1946.
Rangarajan, LN	Kautilya, The Arthashastra, Penguin Books, 1992
Sukla, Kripa Shankar	Aryabhatiya of Aryabhata, Indian National Science Academy, New Delhi, 1976.
Vartak, PV	Astronomical Dating of the Ramayana (Vastav Ramayana in Marathi), Vedvijnana Mandal, Pune.

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